June 1960

Education Library

SCHOOL MANAGEMENT

PRACTICAL SOLUTIONS TO SCHOOL MANAGEMENT PROBLEMS

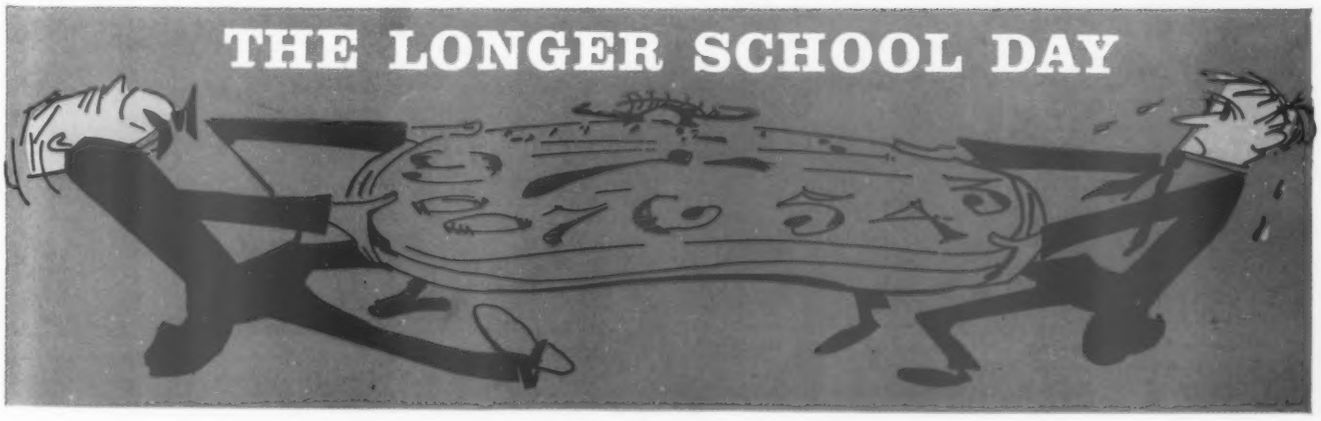
HOW MUCH CAN A DISTRICT PAY FOR DEBT SERVICE AND CAPITAL OUTLAY?

the third report of cei

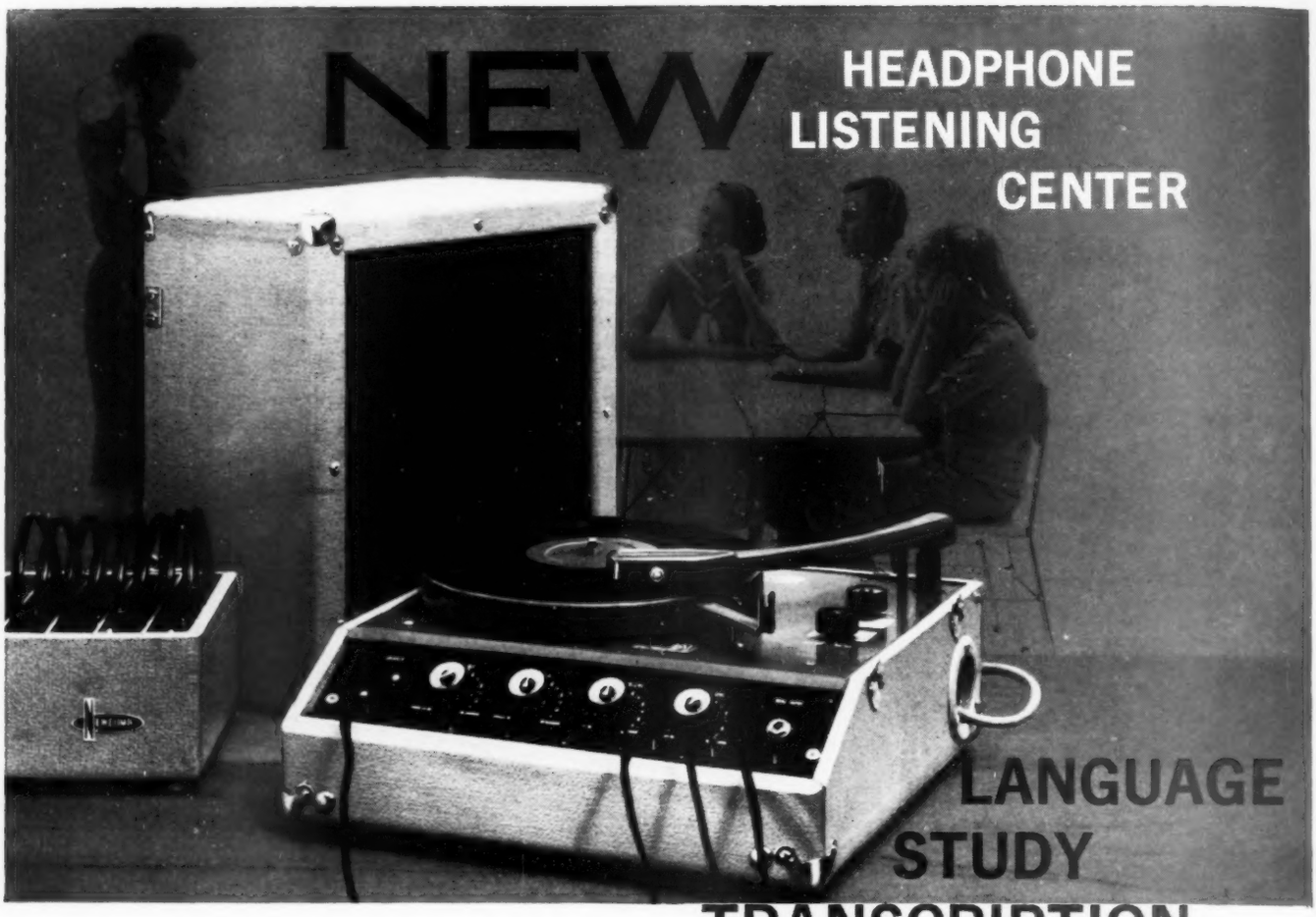
How a professional public relations man handled a bond vote

WHAT IS A GOOD SCHOOL LIBRARY?

THE LONGER SCHOOL DAY



SEE COMPLETE CONTENTS ON PAGE 3

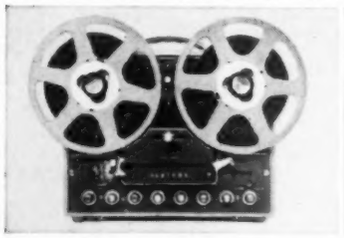


TRANSCRIPTION PLAYER – P.A. SYSTEM BY NEWCOMB

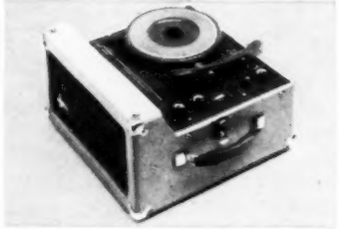
... an economical unit of many uses

The most versatile, most rugged equipment of its kind, the Newcomb AV-164V-LC8 is a complete combined portable transcription player and public address system. *In addition* eight pairs of pin jacks for headphones are built into the control panel for language study, library use, and group-within-a-group listening. Eight pairs of phones, brightly colored red and black to identify them as public property, are supplied in a compartmented case. Cost of the headphones is so low that replacement is usually less expensive than repair. A jack for microphone permits a student to listen to his own pronunciation. There are separate volume controls for mike and phono. The transcription player features a new four speed, variable speed, American-made motor, heavy turntable, deep-ribbed rubber record mat, new plug-in ceramic pickup cartridge, and hideaway compartment for power cord. The new 12 watt Bi-Coupled® amplifier is carefully matched to a large 12″ dual cone speaker for highly efficient coverage. System is transformer powered for maximum safety, best performance. Ruggedly built for years of service... Newcomb audio equipment is truly an astute investment in lasting quality. Write for free bulletin describing the AV-164V-LC8.

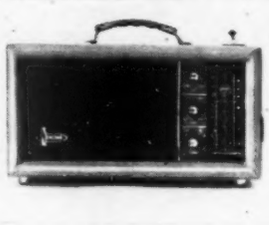
NEWCOMB AUDIO PRODUCTS COMPANY *Department M-6, 6824 Lexington Avenue Hollywood 38, California*



Newcomb Professional Model SM-310 Stereo Tape Recorder is cybernetically engineered for intuitive operation.



Newcomb High Fidelity Classroom Phonographs are efficient audio tools for more effective teaching.



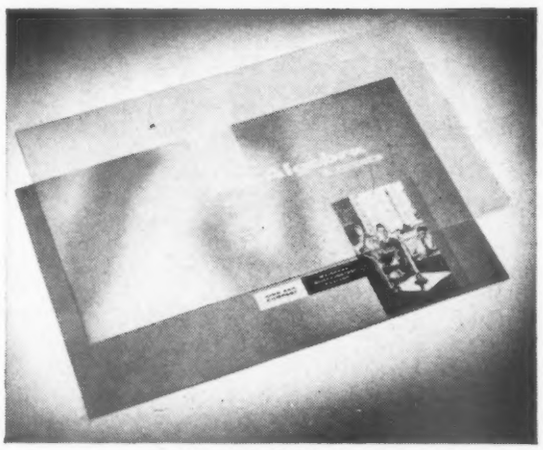
Newcomb High Fidelity Classroom Radios, AM and FM, are built to the same high standards of rugged construction and reliable performance as Newcomb phonographs.

Newcomb Transcription Players are available in 20 models ranging in power from 10 to 56 watts, with 1, 2, or 4 speakers.

(Circle number 741 for more information)

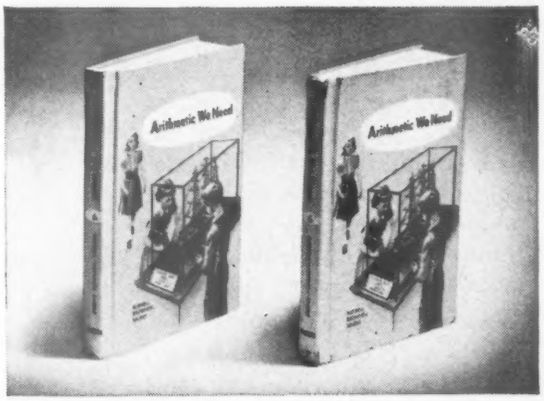
Du Pont introduces a new bookbinding material . . .

New construction welds a transparent shield of protective vinyl over book-cover design



• To produce new *vinyl clad* "PX" cloth a tough, clear film of vinyl is welded to the printed book cloth. This becomes a permanent, invisible shield against stains, soil and abrasion.

BOOKS BY GINN & CO.



• Each of these books was used in a classroom for one year. Book on right is conventional pyroxylin impregnated book cloth. Textbook at left is *vinyl clad* "PX" cloth. This new binding material looks better and lasts longer protected by a tough vinyl film.

COOPERATING with the American Textbook Publishers' Institute, Du Pont scientists have perfected a new *vinyl clad* "PX"* book cloth. This new binding material gives book covers the extra protection of a barrier resistant to abrasion and wear, sealing out stains, moisture and soil. Printed detail and colors stay sharp and clear through long use and hard wear. This is a premium-quality material that will look better and last longer than conventional binding materials.

Leading publishers will be offering selected titles in new *vinyl clad* "PX" cloth for the spring of 1961. Meanwhile, contact your publisher for full details about this exciting new binding material or mail the coupon to E. I. du Pont de Nemours & Co. (Inc.), Fabrics Division SM-06, Wilmington 98, Delaware.

**"PX" cloth is Du Pont's registered trademark for its impregnated bookbinding materials.* Vinyl clad *"PX" cloth covered by U.S. Patent 2,919,206. Other patents applied for.*

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Please send full information on new *vinyl clad* "PX" cloth and a list of publishers featuring titles in this exciting new binding material.

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School_____

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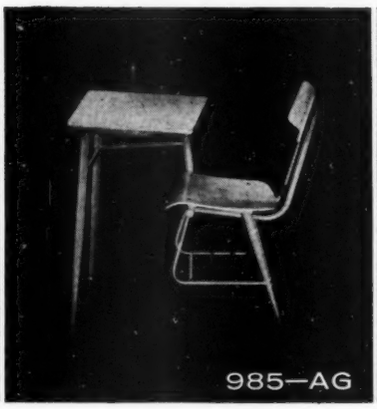

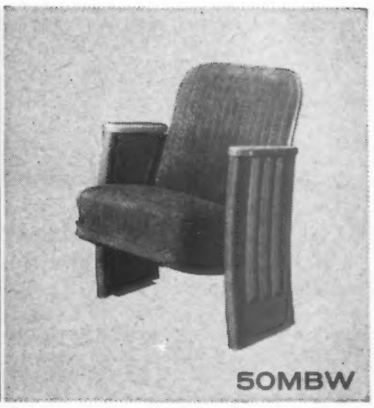

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Vol. 4 No. 6

S | M

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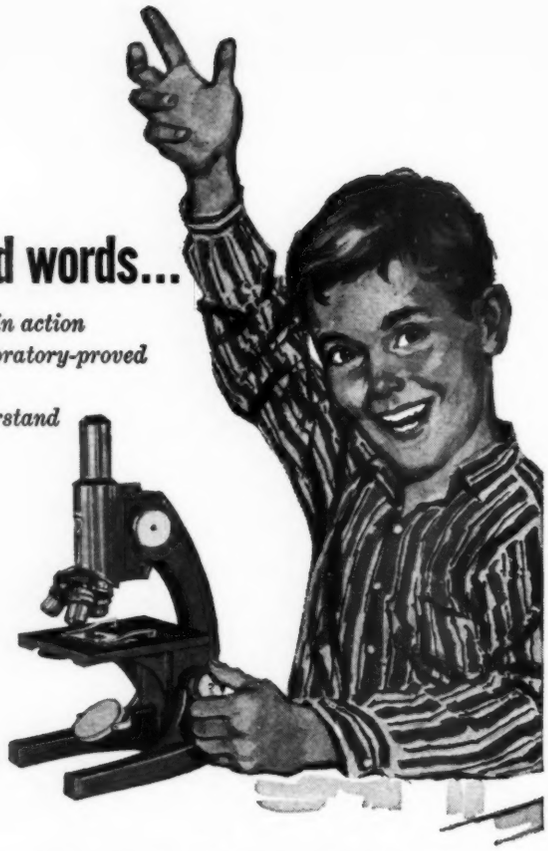
worth a thousand words...

Let your students see science in action for themselves with these laboratory-proved educational instruments by Bausch & Lomb. They'll understand better, faster—be eager to learn more.



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SCHOOL MANAGEMENT

22 West Putnam Ave., Greenwich, Conn.

Volume 4 Number 6

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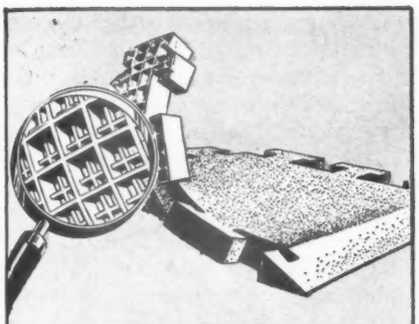
Include old address as it appeared on previous issues (if possible send label from magazine). Do not depend on the post office to forward either the change of address or your magazines.

L.A. SCHOOL SYSTEM SELECTS MITCHELL'S "SAFETY SURF" AFTER 11-YEAR SEARCH !



The exclusive double-action underside of the Mitchell SAFETY SURF is clearly shown in the blow-up drawing above. The heavier ribs take the initial shock—the second smaller ribs absorb whatever impact remains. Also note the beveled "Safety-edge" used on all outside mats.

Major Break-Through Comes After Exhaustive Research Covering Over 80 Cushioning Materials.

"Rigidly Tested in Actual School Installations for Over Seven Years."

SAFETY SURF has been successfully field tested for 90 months continuous service under elementary playground apparatus in Los Angeles schools without need for any maintenance, repair or replacement. SAFETY SURF is also completely sanitary. Cushioning properties remained unchanged and test records showed no head fractures or concussions had occurred during this entire development and testing period.

SAFETY SURF Called "An Outstanding Achievement in Rubber Products Engineering."

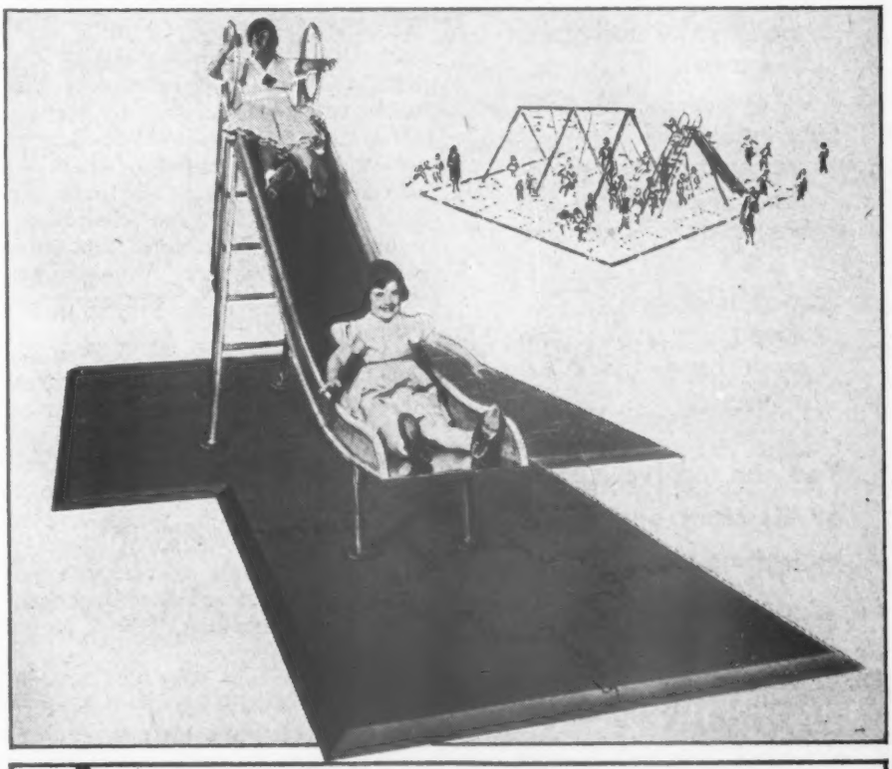
To successfully meet the exacting requirements set forth by Los Angeles Schools necessitated advanced engineering concepts which resulted in the development of SAFETY SURF. SAFETY SURF has passed with flying colors all the general and laboratory test requirements of the Los Angeles Standard Specification. Independent testing companies have thoroughly laboratory and field tested SAFETY SURF as to outdoor weathering, aging, wear, cushioning properties, and retention of cushioning properties after weatherometer, resistance to compaction, abrasion, and other tests. Simple, inexpensive installation is one of the many practical advantages of SAFETY SURF.

California School District Reports "No Major Accidents on Three-Year-Old SAFETY SURF Installation."

Reports from 3-year-old installations indicate engineered protective cushioning properties of SAFETY SURF have minimized injuries from all types of falls and have eliminated the permanent injuries resulting from head fractures and concussions. School liability insurance rates depend on accident record. It is anticipated that rates will be influenced by the superior protection of SAFETY SURF.

L.A. Launches Systematic Program to Replace Emergency Use of Sandboxes.

Recognizing a need for engineered protective cushioning materials, Los Angeles has established exacting requirements for cushioning products calling for adequate cushioning protection unaffected by continuous exposure to outdoor weathering and the severe foot traffic wear of playing children. The sand replacement program has been launched with the initial contract of approximately 53,734 square feet of Mitchell's SAFETY SURF.



NOW — Write, wire or phone today:

SAFETY SURF purchase or lease plans can be arranged to suit your budget requirements.

Mitchell Rubber Products, Inc. 2120 San Fernando Rd., Los Angeles 65, Calif. Dept. S – Phone CApitol 3-1331

(Circle number 738 for more information)

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How many pupils?

SIR: I would like to congratulate you on the first installment of your Cost of Education Index. I think this will be very helpful to me and many other school administrators.

I do have one question. In figuring your per pupil expenditure, did you use average daily attendance, average enrollment, or census figures? The basis used would make a considerable difference.

When I checked the Index, using average daily attendance, I found that we are high on pupil expenditure but low in salaries, number of administrators, and many other things. When I checked this using enrollment, I came up with figures more in line.

G. B. WADZECK
SUPERINTENDENT
SAN ANGELO, TEX.

■ *Expenditure pupil units, based on ADA, were used. For an explanation of this procedure, see page 49 of this issue.* ED

Fast action

SIR: The April issue of SCHOOL MANAGEMENT arrived this morning at 9:30 a.m. At 9:40 I was called regarding some percentage figures for budget categories for our 1960-61 budget which will be submitted to our board of education tomorrow afternoon. We have always gotten our comparison figures from U.S. Office of Education publications which run two years behind the current year and three years behind new budgets.

To make a long story short, page 105 (*SM's Cost of Education Index*) provided us with an up-to-date set of figures which will be quoted in our budget which will be presented tomorrow. I envision this as the first of many uses for CEI in Albuquerque and in schools across the nation. I sincerely believe that SCHOOL MANAGEMENT is performing a real service to American education. Congratulations!

ROBERT J. MYERS
DIRECTOR OF RESEARCH
ALBUQUERQUE PUBLIC SCHOOLS
ALBUQUERQUE, N. M.

P.S. Superintendent Spain and Assistant Superintendent Turpen share my thinking on CEI. The two copies of the magazine that we received have been involved in a three-way shift all day so that we could all read and digest the first installment. Congratulations from both of them. We are already planning many local uses of CEI.

How do we compare?

SIR: I have been very much impressed with your Cost of Education Index. In order to give evaluation to these items, as a school board member, I have asked the business manager for Glenbrook, Ill., High School to show how our school district compares with the averages for this region of the nation, as well as the national averages.

When the other board members and I have this information, I think we will be in a better position to know where we stand as a school district, and to determine whether we are wasting money in certain areas of the school budget.

Congratulations on the idea. I think it is terrific.

W. A. SHANNON
EXECUTIVE DIRECTOR
NATIONAL SCHOOL BOARDS ASSOCIATION

How CEI was weighted

SIR: I have read with interest your first installment. . . .

In order that we may make some comparisons in our schools, could you tell us without too much trouble how pupils were weighted, both as to grade and sparsity of population? This will assist us in making more comparable comparisons.

R. L. HERBST
ASSISTANT SUPERINTENDENT
BUSINESS ADMINISTRATION
DEPARTMENT OF PUBLIC INSTRUCTION
STATE OF DELAWARE

■ *Pupils were weighted on the basis that it takes 1.3 times as much money to educate a secondary school student as it does to educate a student in the elementary grades.* (See SM, May, '60, page 62, for an explanation of this procedure.)

A sparsity correction was applied for all elementary schools with fewer than 317 students in ADA, all high schools with fewer than 695 students in ADA. If your schools fall into this category, send a card to SCHOOL MANAGEMENT *listing your elementary and high school*

continued on page 12

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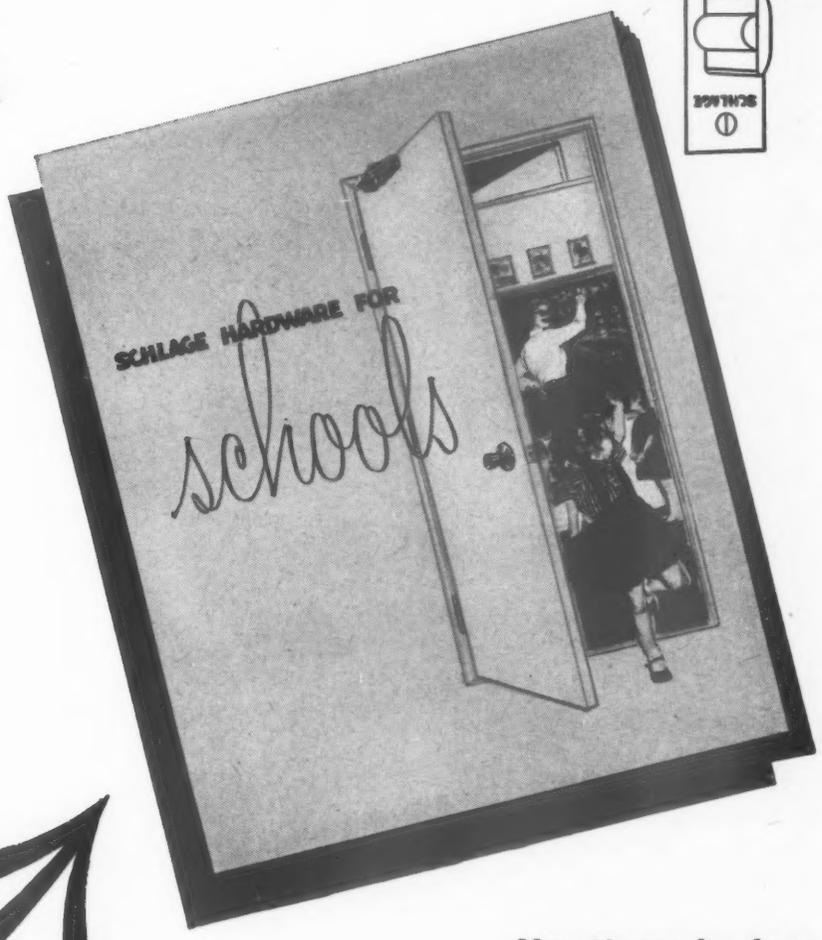
How to Select School Locks



New 12-page brochure now available from Schlage... complete with Selector Chart for school locking

LOCKING A SCHOOL is an important responsibility. Supplies, classrooms and service facilities must be kept safe from invasion of course. And locks to be efficient, as well as economical, must be of *trouble-free* quality. Beyond these basics is design – conformity with the architectural motif.

To provide school managements with authoritative information on school lock functions and features, Schlage has prepared the brochure shown here. It is sent without charge or obligation. You will find it most helpful in discussions with your architect and builder.

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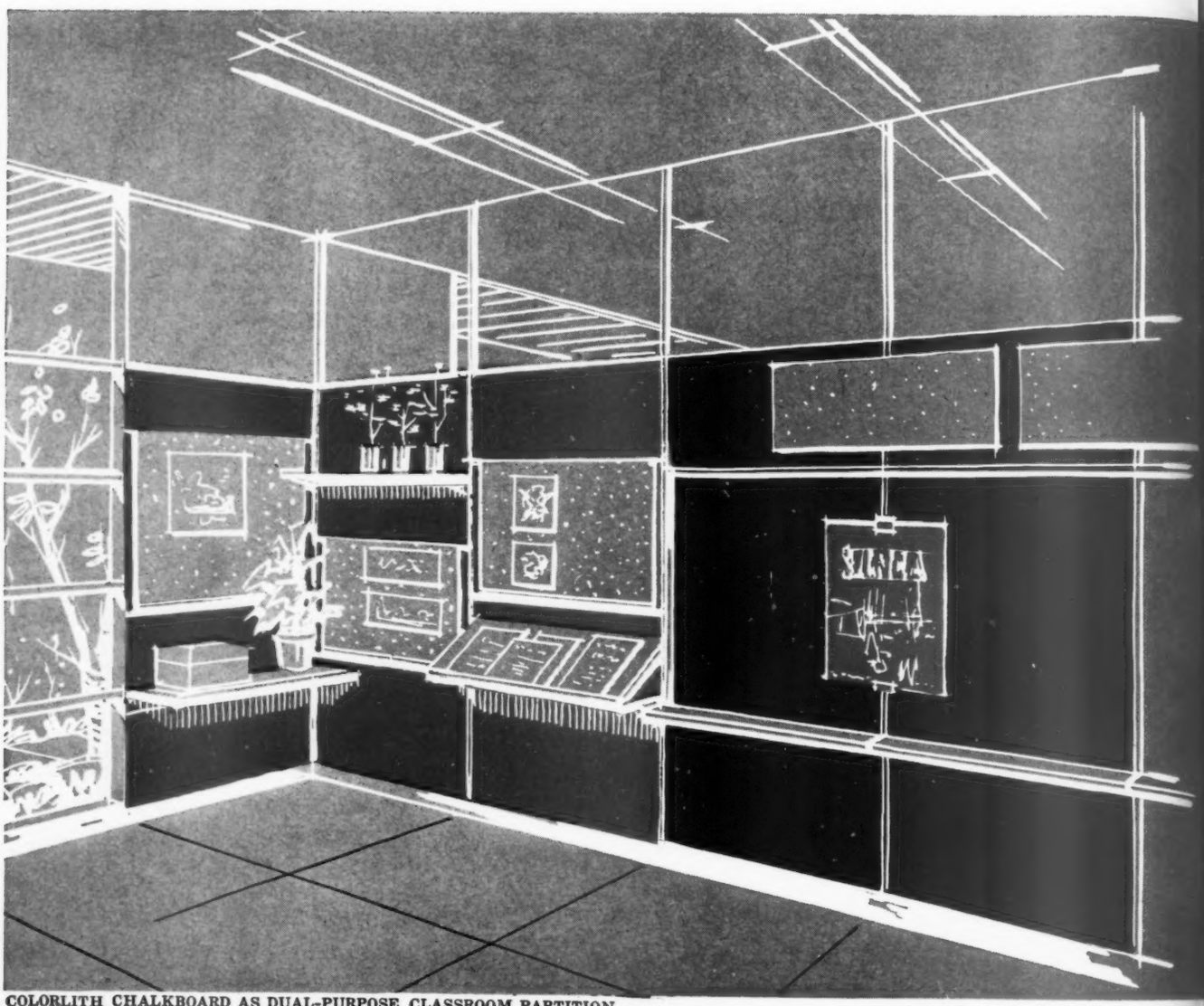
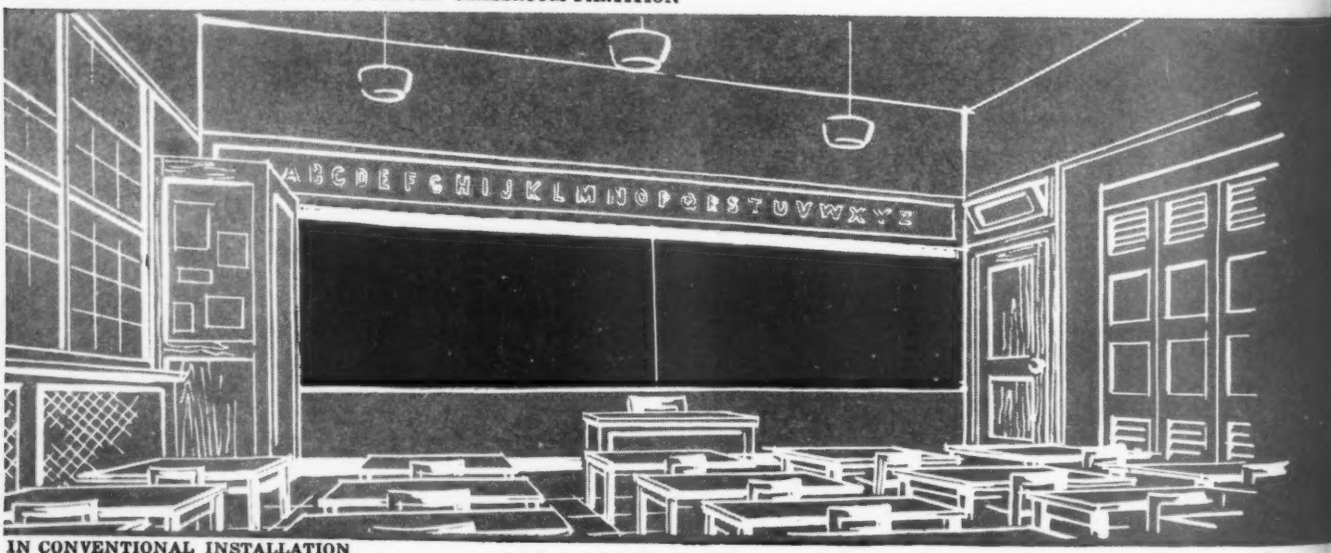
Exciting new directions in classroom design no



COLORLITH CHALKBOARD AS DUAL-PURPOSE CLASSROOM PARTITION



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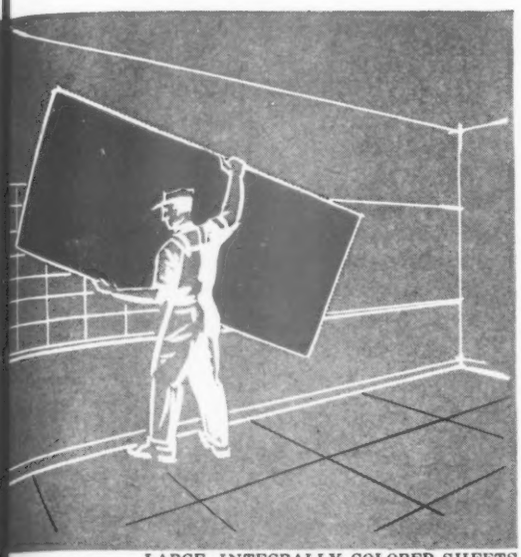
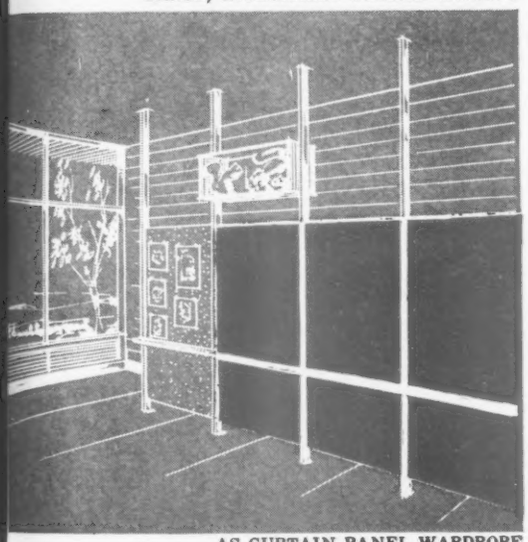
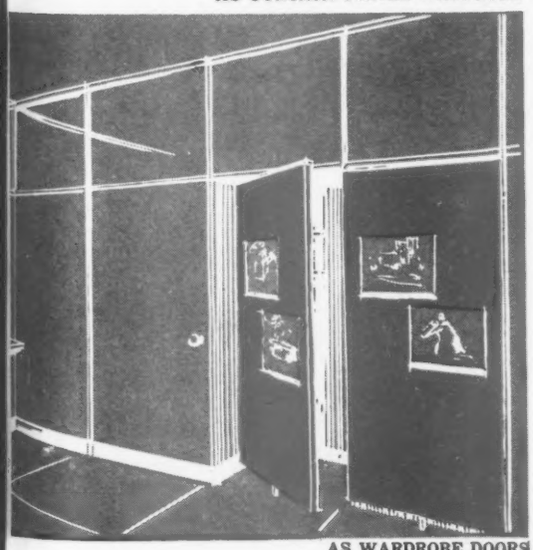


LARGE, INTEGRALLY-COLORED SHEETS



AS CURTAIN PANEL WARDROBE



AS WARDROBE DOORS

At last...an ideal writing surface that offers structural strength and decorative appeal!

Let imagination be your guide in finding exciting new uses for versatile J-M Colorlith Chalkboard! The integral color and structural strength of this unusual asbestos-cement material make possible such novel constructions as partitions...doors...wardrobe panels...movable storage units... convertible and easel-reversible units. Yet it costs less than other quality boards!

Colorlith is available in three eye-pleasing colors: Cyprus Green, Cameo Brown and Charcoal Gray. Panels in Projection White are also available for use as a screen for slides and films. The 4'x8' panels are light in weight, easy to handle and install.

Colorlith affords good "tooth" without "drag." Chalk glides smoothly over the surface in a full, unbroken line of greater intensity. Colorlith chalkboards are easy to clean. Their clear, dark background permits erasure without "ghosting," requires no "chalking-in."

A few of the exciting new classroom uses for Colorlith are shown in a new brochure, "New Directions In Chalkboards," which is yours for the asking. Detailed schematics show how Colorlith can be installed with or without trim, using tackboard and snap-on chalk trays. You will find this brochure an exciting take-off point in discovering the advantages of J-M Colorlith—the most versatile chalkboard material you've ever seen!

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NEW YORK 16, N. Y.

Please send me J-M brochure IN-295A, "New Directions In Chalkboards."

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CITY _____

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(Circle number 729 for more information)

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Modern, attractive design *saves classroom space;* Kinetic Barrier Action *provides continuous, room-wide ventilation. And now — optional air conditioning!*

DESIGNED TO GIVE your classroom more usable space, TRANE Unit Ventilator is the most compact in the industry. The new TRANE Unit Ventilator is up to 33% thinner than other makes of unit ventilators . . . provides up to 14 sq. ft. more usable space in the average size classroom. TRANE'S same space-saving cabinet design is available in 28″ and 32″ heights for heating, air conditioning, and ventilating with steam, hot water, chilled water or electricity.

This new, compact TRANE Unit Ventilator represents the practical approach to the design and use requirements of the modern classroom. It's attractive and functional . . . without frills and space-wasting bulk. TRANE Unit Ventilators are offered with optional shelving and cabinets; and the matched components are skillfully blended together to present an unbroken, unified appearance.

Every student has a "fresh air seat" with TRANE'S new Unit Ventilator system. Exclusive *Kinetic Barrier* action provides continuous powered ventilation, heating and air conditioning from room-wide outlets. Eliminates window downdrafts, sleepy corners . . . provides an ideal climate for learning all day long! *Kinetic Barrier* action solves classroom ventilating problems with a rising wall of tempered air along the entire outside wall or windows.

Other systems, with on-and-off action, can allow dead, stale air to pile up in corners. When their action is "off" there is no positive protection from chilling window downdrafts. TRANE operates with continuous *powered* ventilation every moment the room is occupied.

Now TRANE — the people who have air conditioned *everything* from skyscrapers to jet planes to subway trains—offer the TRANE Unit Ventilator system for complete year-round air conditioning. The chilled water source for air conditioning may be included when the system is installed or added later without classroom alterations.

Trane Unit Ventilator is best for your climate

If you plan to build or remodel your school, turn to TRANE for the system that's best for your school, best for your climate. Have your architect, contractor or consulting engineer contact your TRANE Sales Office. Or write TRANE, La Crosse, Wisconsin.

For any air condition, turn to

TRANE

MANUFACTURING ENGINEERS OF AIR CONDITIONING, HEATING AND VENTILATING EQUIPMENT FOR THE MODERN SCHOOL

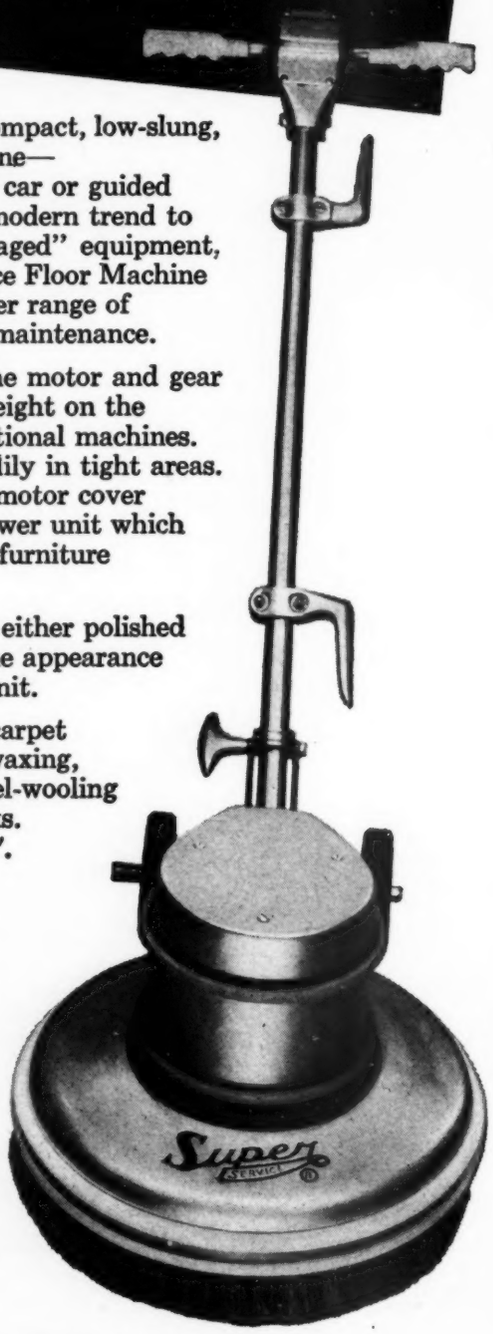
THE TRANE COMPANY, LA CROSSE, WIS. • SCRANTON MFG. DIV., SCRANTON, PA. • CLARKSVILLE MFG. DIV., CLARKSVILLE, TENN. • TRANE COMPANY OF CANADA, LIMITED, TORONTO • 100 U. S. AND 13 CANADIAN OFFICES

TRANE Unit Ventilators provide up to 14 sq. ft. more usable space

The TRANE Unit Ventilator is up to 33% thinner than other makes. And all units available in 28" as well as 32" heights. This compact design gives you up to 14 sq. ft. more usable floor space in the average size classroom.

(Circle number 751 for more information)

Presenting- the NEW concept in floor machines



● Here it is—your new, compact, low-slung, up-to-the-minute Floor Machine—as modern as the latest sports car or guided missile. In keeping with the modern trend to more compact, mobile, "packaged" equipment, this new Series SS Super Service Floor Machine gives you easier handling, wider range of utility, lower labor cost floor maintenance.

This new Super SS puts the motor and gear unit closer to the floor—the height on the brush is lower than in conventional machines. The Series SS is operated readily in tight areas. A rubber bumper around the motor cover protects furniture from this lower unit which gets close up to hard-to-move furniture and walls.

And all metal surfaces are either polished or heavily chrome plated. Fine appearance is assured for the life of the unit.

Use it for wet scrubbing, carpet shampooing, floor polishing, waxing, sanding, buffing, grinding, steel-wooling and all floor maintenance tasks. 4 sizes. 13", 15", 17" and 20".

Trouble-Free Motor...
The specially designed compact motor and gear unit on Super Series SS Floor Machines provides maximum reliability and rigidity under the most extreme hard duty. Lowest noise level—practically silent. Extremely high overload capacity will function perfectly far above rated HP. Planetary, helical cut gear is permanently lubricated and sealed. Shorter, sturdier handle is adjustable through 90°. Self-retracting 5" ball bearing wheel carriage. Simple, durable switch, weight of hand alone keeps switch in contact—no effort needed. Stops when grip is released.

Your local Super distributor will gladly demonstrate.

Write for catalog.

SALES AND SERVICE in Principal Cities IN CANADA: Floor Maintenance Equipment Company TORONTO MONTREAL • VANCOUVER

"Once Over Does It"

SUPER SUCTION SERVICE®

Power Suction Cleaners • Quality Floor Machines

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"THE DRAFT HORSE OF POWER CLEANING MACHINES"

THE NATIONAL SUPER SERVICE COMPANY 1959 N. 13th St., Toledo 2, Ohio

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enrollments (separately) and we will be pleased to work out the sparsity correction for your district. ED

For community use

SIR: We are extremely pleased to see the first installment of your excellent article in relation to finance. We feel that this is going to be a guide not only to maintain our current status in terms of progressive thinking in financing our schools, but to increase the possibilities of the same.

We are interested in acquiring several copies of this article for use in our community groups.

O. E. HILL
SUPERINTENDENT
CLEVELAND HEIGHTS, OHIO

Invaluable

. . . It should prove invaluable to districts throughout the nation.

EARL J. GOLDBERG
MT. PLEASANT EDUCATIONAL IMPROVEMENT ASSOCIATION
WILMINGTON, DEL.

Tremendously significant

. . . a tremendously significant study which should contribute a great deal to the development of more understanding concerning the costs of education. The broad view of a national survey with subdivisions for geographical areas is very effective. I can see Dr. [Orlando F.] Furno's fine hand in the organization of this study.

R. C. BATES
SUPERINTENDENT
VANCOUVER, WASH.

Value to architects

SIR: Even though SCHOOL MANAGEMENT is not aimed primarily at architects, your magazine almost always includes a great deal of prime information which is of inestimable value to the architects who are concerned with school design.

In our office, SCHOOL MANAGEMENT receives thorough review, and frequently generates discussion which has a direct bearing on the buildings we design. SCHOOL MANAGEMENT is only one of a number of magazines dealing with educational problems which we receive, but it is certainly the most valuable. I am certain that part of the value to us of your magazine is the fact that you do not make a conscious effort to be of value to us!

JOHN BYRON HACKLER
FOLEY HACKLER THOMPSON LEE
PEORIA, ILL.

NOW TEACHING AND SELF-TRAINING MADE EASIER!

"ADD+A+TRACK"

BY V-M

DRAMATIC NEW DEVELOPMENT IN TAPE RECORDERS!

• Unique advance for modern teaching and learning! • Develops oral skills and promotes retention! • Excellent for language and speech students—speeds learning! • Helpful to music students—helps improve technique! • Benefits teachers—saves time and energy!

Exclusive V-M "Add-A-Track" is the big *new* feature in tape recorders! Opportunities for powerfully effective teaching methods are limitless! Record on one track, rewind the tape and record again on another track *while listening* to the first recording through the V-M recorder's own speakers or through another speaker system. Then play-back again and you hear *both* recordings *simultaneously!* The student can rerecord his voice or instrument, repeatedly, without affecting the first (or master) track in any way. He can even play a duet with himself!

For budget-conscious administrators, here is the economical way to begin a completely effective modern language laboratory. Here, in one compact portable case, simplicity of operation is combined with practical versatility for the many uses it will find in every school.

Ask for a thrilling demonstration of V-M "Add-A-Track"—an engineering advance that benefits both in the classroom and at home. Investigate *today!*

V-M/"ADD-A-TRACK" 'tape-o-matic'® 4-TRACK STEREO-PLAY TAPE RECORDER—Records and plays-back monophonically on four tracks. Plays stereophonic tapes. High-Fidelity Speaker System. Simple Push-Button controls assure complete simplicity of operation. Model 720..... $225.00 List*

MODEL 166—AUXILIARY AMPLIFIER-SPEAKER—for stereo playback $75.00 List*

*Slightly Higher West

the Voice of Music®

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V-M CORPORATION—Dept. SM
305 Territorial Road
Benton Harbor, Michigan

Please send me without obligation, your booklet giving additional information on "Add-A-Track"

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ADDRESS _____

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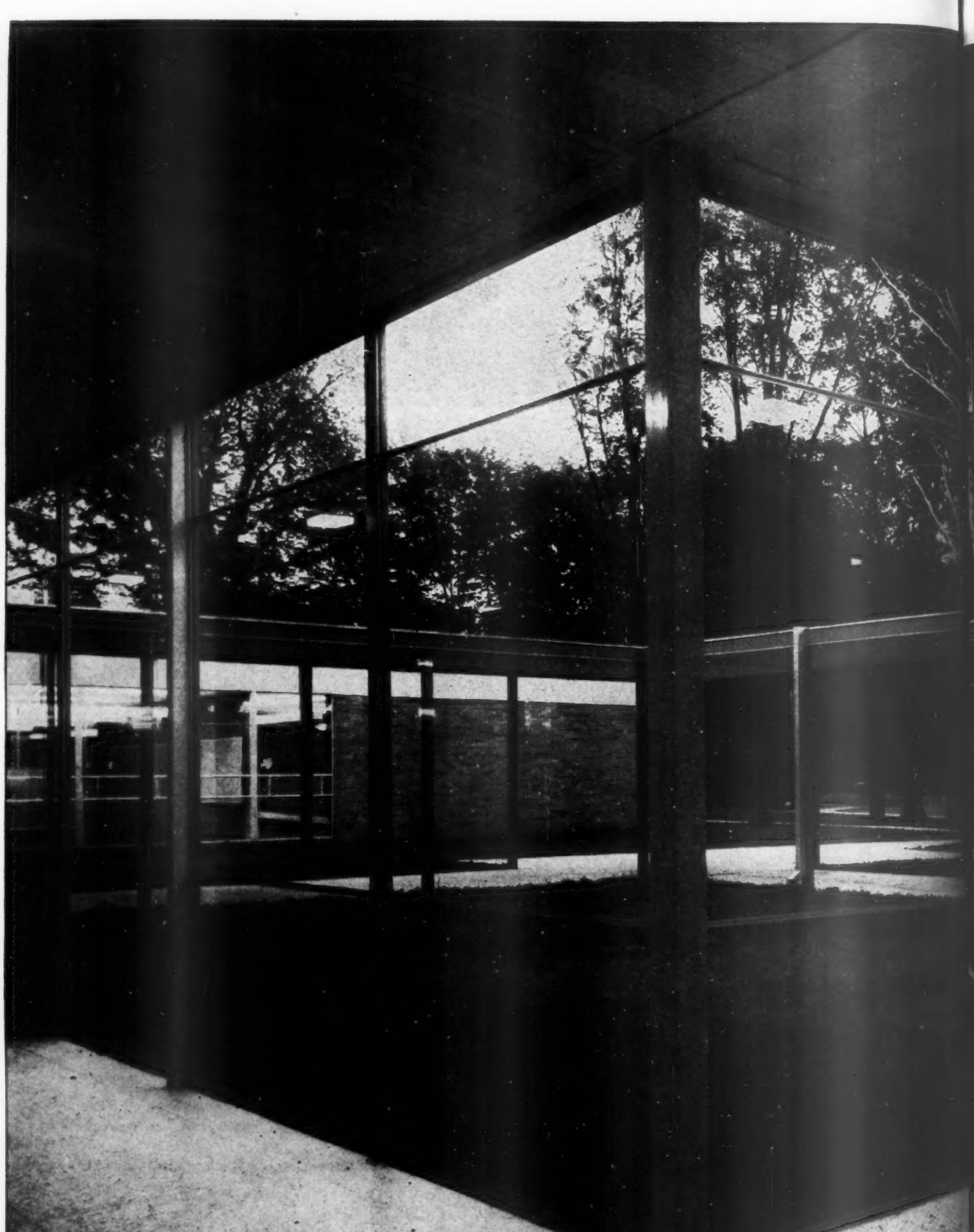

Architects: Wakely-Kushner Assoc., St. Clair Shores, Mich.
Contractor: Petku Construction Co., Birmingham, Mich.
Glazed by City Glass Company, Detroit, Mich.

Glass for light. Today's school architect designs with natural light. With glass, he builds walls of light . . . to enliven the routine of study, to bring the outdoors in and make going to school more inviting. Gordon Road Elementary School, St. Clair Shores, Michigan, is a case in point. It's the kind of school *you* would have enjoyed going to. Take a stroll around it, through it, you'll find glass everywhere . . . doing a job no other material can do. All of this glass was supplied by Pittsburgh Plate Glass Company.

Pittsburgh Plate Glass Company

Paints • Glass • Chemicals • Fiber Glass
In Canada: Canadian Pittsburgh Industries Ltd.

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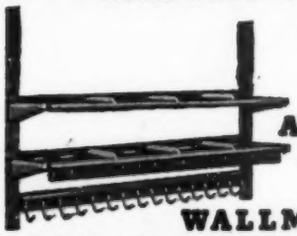
Schooline®
WARDROBE SYSTEMS



Fixed columns • adjustable shelves

Adjustable Height
WALLMOUNTS

Solve the pupil wraps problem efficiently with Wallmount Coat and Hat Racks. Mount on any available wall space. Hat shelves and hanger bar adjustable on permanently attached columns to height for any age group. Double hat shelves and double row of spaced coat hooks accommodate 6 pupils per running foot. Basic 3' 2" or 4' 2" units interlock to make continuous racks to fit any space or capacity requirements.

Same as above... mounted on floor stand with Chalk Board or Cork Board and off-the-floor rack for overshoes. Each unit 4' 2" in length.

Nos. B-3 & B-4 Wallmount Overshoe racks... 3' 2" & 4' 2" lengths can interlock.

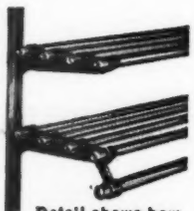
Chalkrobe—combination wardrobe racks and chalkboard

Corkrobe—combination wardrobe rack and corkboard

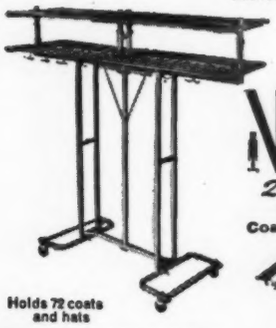
CUSTOM-LINE

Aluminum
Coat and Hat Racks

Tailored to fit any given open or closeted wall area. Smart in design and modern in "clear", "gold" deep etched anodized finishes and combinations. Quality built—closed-end aluminum tubing, rigidly held in cast aluminum brackets that are adjustable for height in dovetailed mounting extrusions. Brackets also adjustable to any desired centers.



Detail shows how dove-tail extrusions (which mount on any centers) hold brackets at any desired height.



Veep
Quick Folding
PORTABLE
Coat and Hat Racks

Holds 72 coats and hats

Wheels as readily as a small service cart. The Veep rack unfolds into a rigid 6' 6" long unit holding 72 coats and hats. Scientifically counterbalanced so that it can be set up literally in seconds and fold down for storage as easily as an umbrella. Built of square tubular steel with double hat shelves of closed-end aluminum tubes supported by cast aluminum brackets. Plated to assure permanent beauty. Quality in engineering, construction and finish. The most efficient equipment yet developed for dining and meeting rooms, stand-by equipment, etc. ... for wherever the "load" varies.

Sets up with a sweep of the arms ... in 2 or 3 seconds..

Wheels through ordinary doorways. 4' x 8' area stores racks for 720 people.

Write for Complete Catalog #745

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SM WHERE TO GET HELP

A guide to useful information

STAFFING

Teacher turnover. In 1957-58, 137,000 public school classroom teachers left the teaching profession, almost 11% of the average total teaching staff for that year. In addition, 77,000 teachers moved from one school district to another making a total separation rate of 17% of the average total teaching staff.

At the same time, 284,000 teachers were newly hired. Of these, 150,000 (52.8%) were entering public school teaching for the first time. 56,800 (20%) were re-entering after an absence and 77,000 (27.2%) were transferring from one school district to another.

Highest separation rate occurred among women teachers in high schools (19.5%). The lowest rate was among men high school teachers (14.9%) and elementary teacher rates were intermediate (16.8% for women and 17.3% for men). District size affected separation rates. Those with enrollments over 25,000 recorded the lowest rates (14.7%) and those with enrollments under 50 recorded the highest rates (29%).

TEACHER TURNOVER IN THE PUBLIC SCHOOLS *1957-58, by Ward S. Mason and Robert K. Bain. U.S. Department of Health, Education, and Welfare, Washington 25, D.C. 38 pages. 30 cents.*

SCHOOL FINANCE

State taxes. Designed to supplement the NEA's pilot report, "Seven State Taxes: Rates and Collections," published last year, this brief booklet includes rate changes that were made up to January 1, 1960. In addition, Alaska and Hawaii have been added to the tables where applicable.

Since the first of the year, two states have made other changes in their tax collection structure. On May 1, 1960, Georgia began a withholding plan for collecting state income tax. On July 1, 1960, Kentucky will begin collecting a 3% sales tax, and, on the same date, it will lower its cigarette tax from 3 cents to 2½ cents per pack. Later, on January 1, 1961, the state plans to lower its individual income tax by eliminating the surtax and increasing the tax credit per exemption from $13 to $20. These and other changes that may develop, together with the new information included in this supplement, will appear in a completely revised edition of the NEA's original publication next year.

SUPPLEMENT, SEVEN STATE TAXES: RATES AND COLLECTIONS. *NEA Committee on Educational Finance, 1201 16th St., N. W., Washington 6, D. C. 20 pages. Free.*

RURAL SCHOOLS

Disappearing small schools. The fourth and final report in the Office of Education series, "The Rural School Survey," this booklet presents the facts about size trends in America's public schools.

In 1956, more than one-third of all the school districts in the United States enrolled 15 or fewer pupils in their schools; half of these small districts did not operate schools at all.

The number of school districts has declined from 127,530 in 1932 to 48,036 in 1958—a decrease of 62.3% during the past 26 years. These disappearing districts were disproportionately the smaller ones.

The average size of school districts has increased during the last decade. Yet, many of them still employ comparatively few teachers. The average staff for all school districts in 1956 was 27; for the rural counties it was 12. A total of 25,200 schools of the one-teacher type were reported by states in 1958. This is only 12.9% of what it was in 1918. In 18 states, fewer than 5% of all schools are now of this type. In only two states are more than 50% of all schools still one-teacher units.

SMALL SCHOOLS ARE GROWING LARGER. *Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. 21 pages. 20 cents.*

SECONDARY EDUCATION

Pre-reading instruction in foreign languages. Designed to help students view foreign languages as a means of communication, this booklet describes

continued on page 21

AMERICAN DESK—AT THE EXECUTIVE LEVEL!

Series 1420 Instructor's Desk

A handsome double-pedestal instructor's desk designed to harmonize with any individual Quadraline unit or group of units! Equipped with center drawer, locking pedestal drawers with deep file drawer in each pedestal . . . and recessed privacy panel. Top size, 30" x 60". Shown with series 800 Arm Chair.

Metal Colors: Mint Green, Sea Blue, Coppertone, Mist Gray

QUADRALINE *by American Desk*

AMERICAN DESK—EASY TO WORK WITH...AND MANAGEABLE!

Series 1100 Open Front Desk *Series 1200 Lift Lid Desk*

Mobile and versatile units that lend themselves *handsomely* to orderly class activity. Easily grouped side-by-side or front-to-front for a variety of arrangements. Embossed book compartments add strength, minimize contact of textbooks on surface. The Series 1100 Open Front has work area 18" x 24". The Series 1200 Lift Lid has "piano" type back hinge and adjustable, non-slamming mechanism on both sides. Top, 18" x 24". Shown with Series 500-F Chair.

Metal Colors: Mint Green, Sea Blue, Coppertone, Mist Gray

QUADRALINE *by American Desk*

AMERICAN DESK—OUTSTANDING LEADERSHIP QUALITIES!

Series 1300 Junior Executive Desk

Just like dad's and just as sturdy! The student counterpart of adult working facilities adapts easily to varied arrangements including staggered seating . . . side-by-side seating that gives 23″ separation from student to student. Assures maximum work space with minimum space requirements. Complete absence of stretchers for greater leg freedom and comfort . . . easy maintenance. Shown with Series 500-F Chair.

Metal Colors: Mint Green, Sea Blue, Coppertone, Mist Gray

QUADRALINE *by American Desk*

AMERICAN DESK – MORE WORK SPACE . . . LESS SPACE REQUIREMENTS!

Series 212 Student Desk

From the popular Reguline group, the design that actually permits *more* units per class than ordinary *small* desks allow! Available with right and left pedestals in 2 adjustable models to cover the complete height range from *22"* thru *29"*. Shown with Series 45 Cluster Chair. Metal Colors: Mint Green, Sea Blue, Coppertone, Mist Gray.

REGULINE *by American Desk*

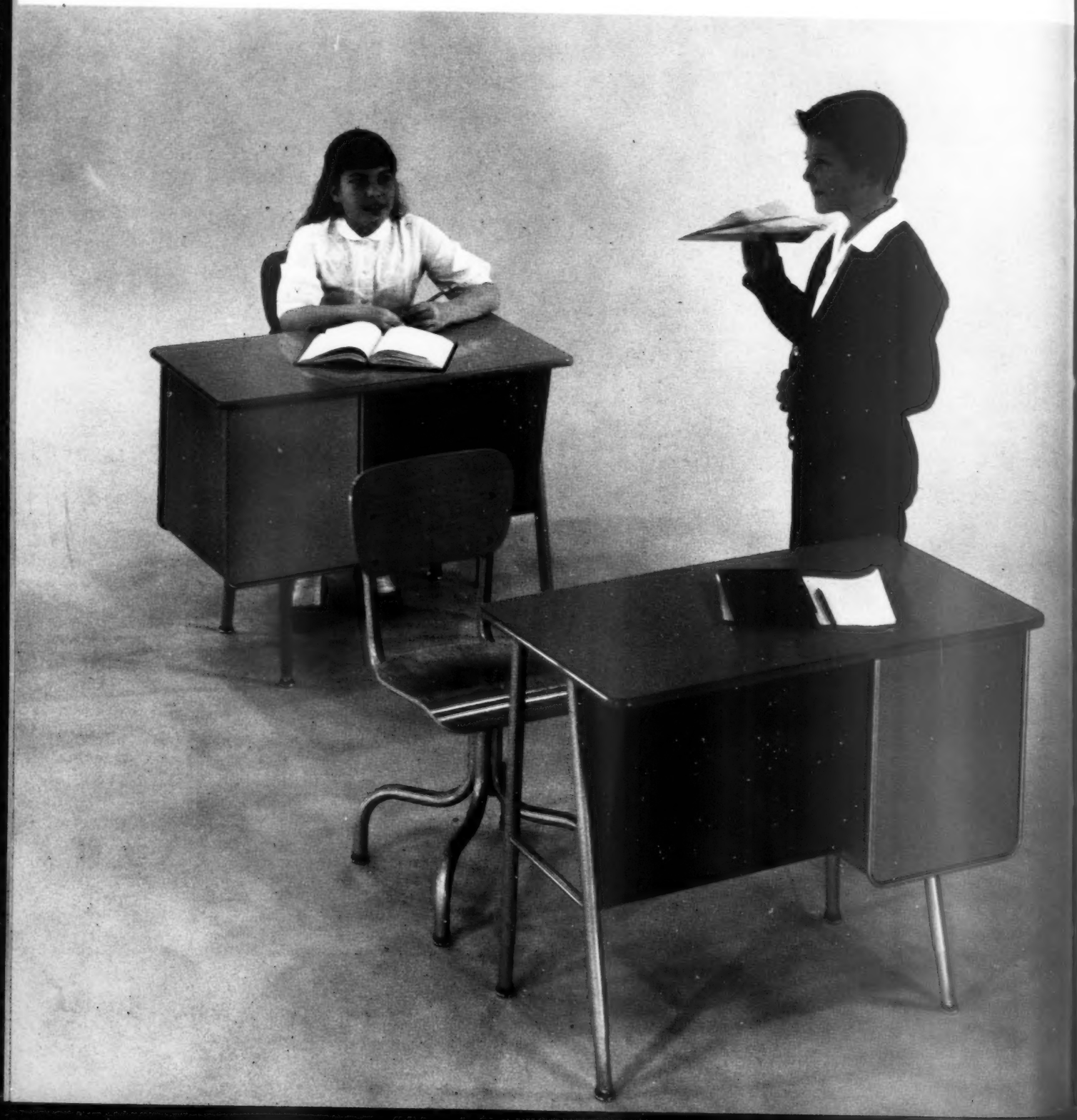
Ask your nearby AD representative to arrange an "on-the-job" demonstration in your school. No obligation.

AMERICAN DESK MFG. CO., TEMPLE, TEXAS
We'd like more details on American Desk School Furniture.
Please send ☐ Complete Quadraline Brochure
☐ Complete Reguline Brochure
☐ Have Representative Call

Name_____

School_____

City_____ Zone____ State_____



the pre-textbook phase of instruction. The purpose of such instruction is to develop firmly practiced habits of hearing and speaking a very limited portion of the foreign language.

Teaching techniques described include mimicry-memorizing, group repetition, dialogue practice, question and answer routines, pattern drills and exercises to reinforce basic learning.

Stressed is the importance of informal day-to-day evaluation of achievement and need for frequent tests of listening comprehension, speaking ability.

MODERN FOREIGN LANGUAGES IN HIGH SCHOOL: PRE-READING INSTRUCTION, *by Patricia O'Connor. Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. 50 pages. 25 cents.*

HIGHER EDUCATION

Teachers' salaries. The NEA's Research Division, in this fourth biennial study, reports on the salaries of professional personnel in colleges and universities. From the facts presented in it, close comparisons can be made with conditions reported in exactly the same pattern two years ago and four years ago.

Full distribution of teaching personnel from one end of the salary range to the other is given for each rank, each type of institution, each geographic area and for each sex. Full distribution of general administrative positions throughout the salary range is also given and the salaries of deans of professional schools are handled in the same way. Forty-eight major tables are used to present this information.

SALARIES PAID AND SALARY PRACTICES IN UNIVERSITIES, COLLEGES, AND JUNIOR COLLEGES, 1959-60. *Research Division, NEA, 1201 Sixteenth Street, N.W., Washington 6. 55 pages. $1.*

CAFETERIA MANAGEMENT

Employees' manual. Personnel policies, lunch room schedules, job descriptions and other information most helpful to the employees of a school cafeteria are spelled out in a concise and highly readable style in this booklet available from the Wellesley, Mass., public schools. The school system's director of cafeterias prepared it to meet a definite need in her department which consists of 33 full-time and part-time employees. In addition to answering many questions about the operation of the lunch program, the manual includes a section on job classifications which gives a breakdown—in brief outline form—of the duties and minimum requirements for each job.

This manual can do much to maintain lunch room operation at a high level.

WELLESLEY SCHOOL CAFETERIA MANUAL, *by Dorothy H. Griffin. Wellesley Public Schools, Wellesley, Mass. Free.*

GUIDANCE AND COUNSELING

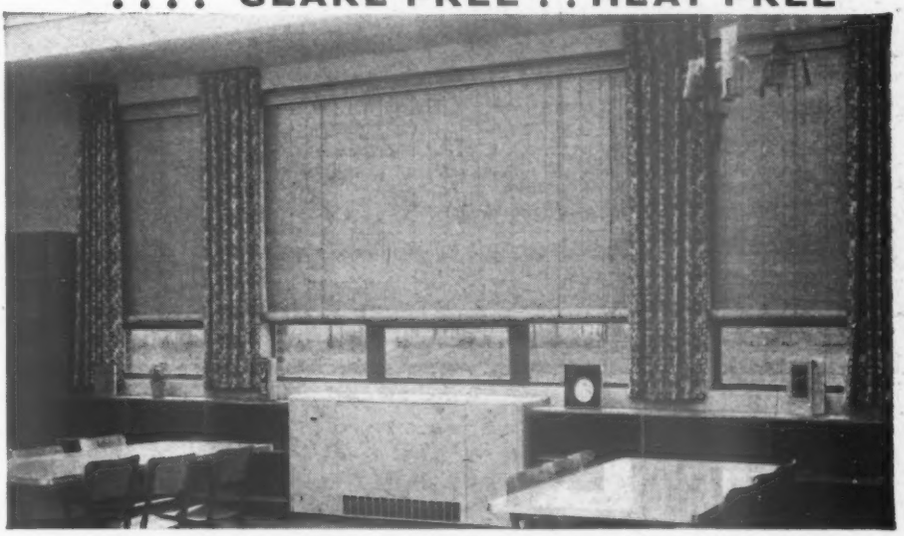
Guidance and the NDEA. In question and answer form, the basic facts about the National Defense Counseling and Guidance Training Institutes Program are given in this pamphlet issued by the Officer of Education. Covered in the material are the origin and purpose of the program, the nature and organization of guidance training institutes and facts about eligibility for enrollment in such institutes.

Reprinted in the booklet are pertinent portions of the National Defense Education Act of 1958. Those interested in furthering their professional training in counseling and guidance will find the answers to all their questions about the government supported program in this booklet.

THE NATIONAL DEFENSE COUNSELING AND GUIDANCE TRAINING INSTITUTES PROGRAM. *Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. Nine pages. 15 cents.*

Classroom Lighting...

.... GLARE FREE .. HEAT FREE

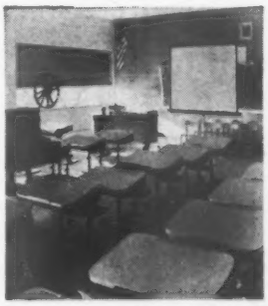


WOVEN WOOD

TEMLITE *Loomwood*

SCHOOL WINDOW SHADES

Complete flexibility of light control is now possible with this new Audio Visual Shade-from well-lighted classroom to "brown-out" - the accepted standard of audio visual treatment. Constructed of precision-beveled bass wood splints woven with seine twine by American craftsmen. Darkens room without sacrificing adequate ventilation.



Practically maintenance free, Temlite's smoothly finished surface is easily kept sparkling clean. Many are still in operation after 20 years of daily use... your best assurance of their long-lasting beauty. There's a custom-finished color which will surely blend with your school decoration scheme.

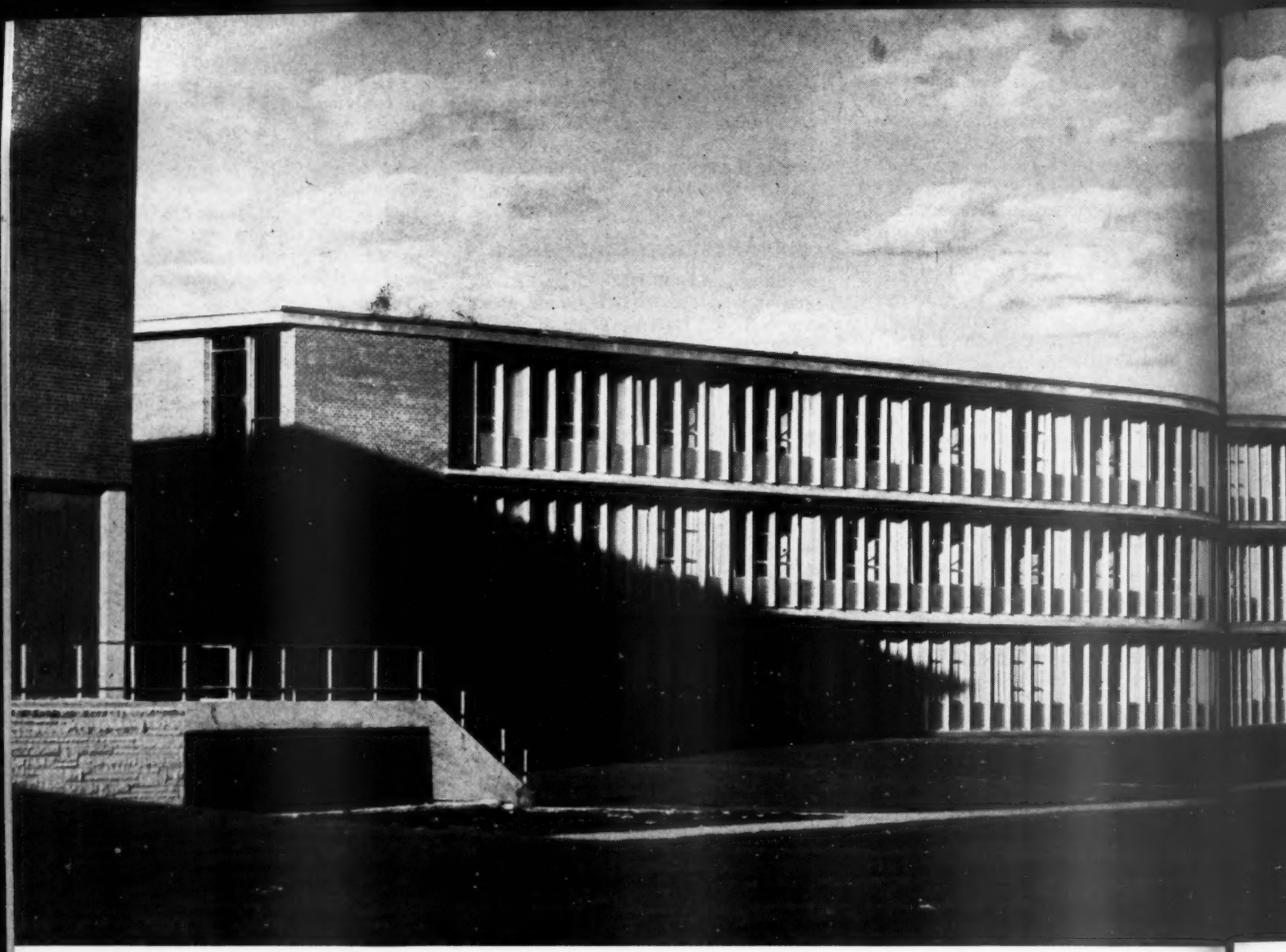
Some Choice Territories are Still Open for Manufacturer's Agents.

For further Temlite information and woven wood shades for audio visual installations, please write. *The* AEROSHADE COMPANY

A Division of Consolidated General Products, Inc.

P. O. Box 559 Waukesha, Wisconsin

(Circle number 757 for more information)



TRUSCON VISION-VENT WINDOW WALLS FIT PROVISO WEST'S PARK-LIKE SETTING

A big school with a small school atmosphere is the way they describe the new Proviso West Township High School, Hillside, Illinois. Occupying a site of 60 acres, the school includes six major functional units grouped around a central mall. Walls are Truscon Aluminum VISION-VENT®.

Many newer schools are going VISION-VENT. Erection is fast, economical. And VISION-VENT skin-type construction provides more usable floor space, reduces weight on frame and foundation. Exterior walls are strikingly modern and beautiful.

Use of VISION-VENT Window Walls assures higher natural light factor, good fire-resistance and insulating value, better ventilation. Panels can be provided with louvers for heating or ventilating systems.

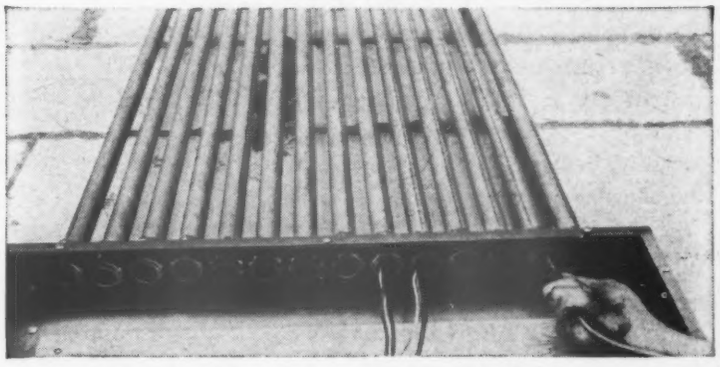
VISION-VENT Window Walls offer a selection of practically any type of window—double-hung, intermediate projected, and many others in steel and aluminum. Trim modern appearance. VISION-VENT is available with a choice of high-gloss panel colors, porcelain enamel, stainless steel, or aluminum.

For all the advantages of modern curtain wall construction—combined with the exclusive feature of ventilated, insulated panels integrated with heavy-intermediate steel windows—investigate Truscon VISION-VENT. Send coupon for full information.

Proviso West Township High School—Hillside, Illinois
Architects: Perkins & Will
Contractor: Powers Construction Company
Product: Truscon Aluminum VISION-VENT Window Walls

REPUBLIC PERSONAL STORAGE AND WARDROBE CABINETS solve many school storage problems. Big and roomy, ideal for storing week-to-week school supplies for efficient classroom operation with facilities for instructor wardrobe convenience. Select from a wide range of sizes and styles. Six attractive colors. Available for immediate delivery. Write for attractive catalog.

REPUBLIC STEEL LOCKERS are first choice of school management responsible for maintaining high operating efficiency and low maintenance costs. Strong, sturdy, rigid, made of steel. Smart styling and design with unitized construction for fast, easy installation. Full inside locker roominess, ventilation, safety. Bonderized. Available in many types sizes, colors, and locking systems. Republic offers complete planning and installation service, assumes full responsibility for complete installation. Call your Republic representative, or write direct.



THE *BEST* COSTS *LESS* INSTALLED . . . Republic ELECTRUNITE® Electrical Metallic Tubing, in the next larger size, provides a pull-in, pull-out, electrical system with built-in capacity for future electrical expansion. And ELECTRUNITE E.M.T. features economies in installation that result in more building per building dollar. Ask your electrical contractor, or write direct for more information.

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World's Widest Range of Standard Steels and Steel Products

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☐ Truscon VISION-VENT Window Walls ☐ Steel ☐ Aluminum
☐ Republic Personal Storage and Wardrobe Cabinets
☐ Republic ELECTRUNITE E.M.T. ☐ Republic Steel Lockers

Name_____ Title_____

Affiliation_____

Address_____

City_____ Zone____ State_____

(Circle number 746 for more information)

THINGS YOUR PUBLIC OUGHT TO KNOW

Basic information that schoolmen can use as part of a community education program

Checklist for high school planners

This citizens' committee report prepared for the Phoenix, Ariz., high schools serves as an outstanding checklist for any board that must answer the taxpayer who asks: "Why should we spend money for this?"

Editor's note: When it was considering the construction of a new school, the Phoenix, Ariz., school board called upon a citizens' committee to survey the situation and make suggestions on types of construction, facilities and materials to be used. The board chose for the citizens' committee men who in their regular jobs have experience in these areas.*

The committee's report, though it refers basically to the Phoenix area, contains valuable information and suggestions for all school districts. *School Management* presents here, pertinent excerpts from the original report.

*Members of the committee were:
Samuel F. Kitchell, Chairman (Kitchell-Phillips Contr., Inc.)
Arthur F. Smead, Vice-Chairman (Motorola, Inc.)
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Jack Beck (Construction Survey)
Americo Lazzari (Arizona Public Service Consulting Engineer)
James B. Holmquist (Civil Engineer, Holmquist Engineers)

■ ■ ■ The construction committee in this report has tried to lay down the basic principles for good design and construction of high school facilities in the Phoenix Union High School District. We do not attempt to tell the board, administrators or architects what specific materials or types of construction to use. We suggest that they be guided by the following criteria.

Compact design

This committee feels that considerable savings can be gained from more compact, one-story design. Borrowing from the basic principles of design of industrial plants this compact design will reduce the amount of corridors, reduce exterior walls having high heat transmission and maintenance, make for more efficient air conditioning, heating, plumbing and electrical distribution. Compact design will also create better land utilization. We recommend this design in preference to two-story construction and the widely disbursed layouts of most of the newer existing high schools.

Some of the existing high schools in the district exemplify what should not be done in order to effect economies through uniformity of design. Once the architect has determined the optimum basic type of structural system—reinforced concrete, prestressed concrete, steel—that system, as much as possible, should be repeated throughout the facility. The structure should also have a uniform modular design that will best utilize standard manufactured building components. Design of customized components of the building should be eliminated. When a specific material and its method of application is selected, it should be used throughout. This achieves economical mass purchasing, more efficient organization of work crews, makes the whole construction procedure simpler and faster.

Complete plant construction

Considering the rapid population growth in the district, the new school plants should not be constructed in stages over several years. One contract on a complete 2,500-student plant should be awarded to achieve the economies of mass purchasing, higher productive crews and lowest contractor and subcontractor costs.

A high school plant can be attractive in the sole expression of its function, without unnecessary architectural embellishments. Specifically, ceilings should be eliminated where not required for acoustical treatment, special lighting or fireproofing. Conduits, ducts and piping do not necessarily need to be enclosed when out of reach. Their accessibility will reduce maintenance costs.

Low maintenance materials

Assuming that new school plants for construction alone will cost $1,240 per student, this is an annual cost over a 50-year period of less than $25 per student. The current maintenance cost in the Phoenix Union High School System is approximately $26 per student per year exclusive of custodial costs. We bring out these figures to emphasize the importance of selecting materials such as concrete, masonry, tile, terrazzo, etc., which have long-wearing and easily cleanable surfaces. Exterior surfaces particularly should be selected that do not require paint or other frequent refinishing.

Locally produced materials

Every effort should be made to use materials manufactured locally (especially masonry units) where the

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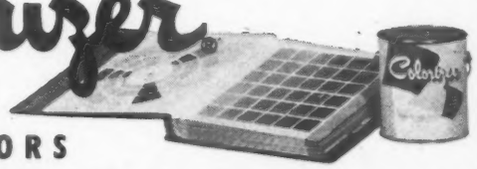

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Long sought by research chemists, the formula of Di-Crobe contains the best properties of a fine quality soapless (anionic) detergent and those of a fully-tested phenolic germicide. Only this combination offers the two major advantages of *stability* of cleaning action and germicidal power, even when exposed to heavy soil, and *mildness* which will not harm the surface being cleaned.

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cost is equal to or less than imported materials. This not only supports local taxpaying industries but means easier availability both during construction and later when maintenance is required.

Heating and air conditioning

It is the considered opinion of the committee that all high schools have a central plant system for complete air conditioning, which is defined as the process of treating air so as to control *simultaneously* its temperature, humidity, cleanliness, and distribution for best human health and comfort. The central heating and air-conditioning plant should be installed with appropriate automatic controls for each classroom with the *initial construction* to effect the maximum possible savings.

A central chilled water system employing centrifugal compressors or a steam absorption system is recommended for the new high school plants. Our studies have also shown it to be the most economical system as to operating and maintenance costs.

In the Phoenix area, U. S. Weather Bureau data indicates that a need for cooling exists 90% of the hours that the students are attending classes.

Actual costs per season (April-May; September-October, 1959) have been shown to be for the four-month period, $1.75 per student or 2.3 cents per day per student. Also, operating costs for the nine-month school year indicate that the increase in operating costs per student for refrigeration air conditioning over evaporative cooling is $1.12 per student per nine-month year or 12½ cents per student per month.

Capital investment for installing evaporative coolers on schools *after* they are built, vs. installing a refrigerated air-conditioning central plant, is only about $10,000 less and coolers have to be replaced at the end of 10 years. But by installing the central refrigerated air-conditioning system initially, a savings of $30,000 to $40,000 in capital investment would be realized over installing it later or installing exaporative coolers instead.

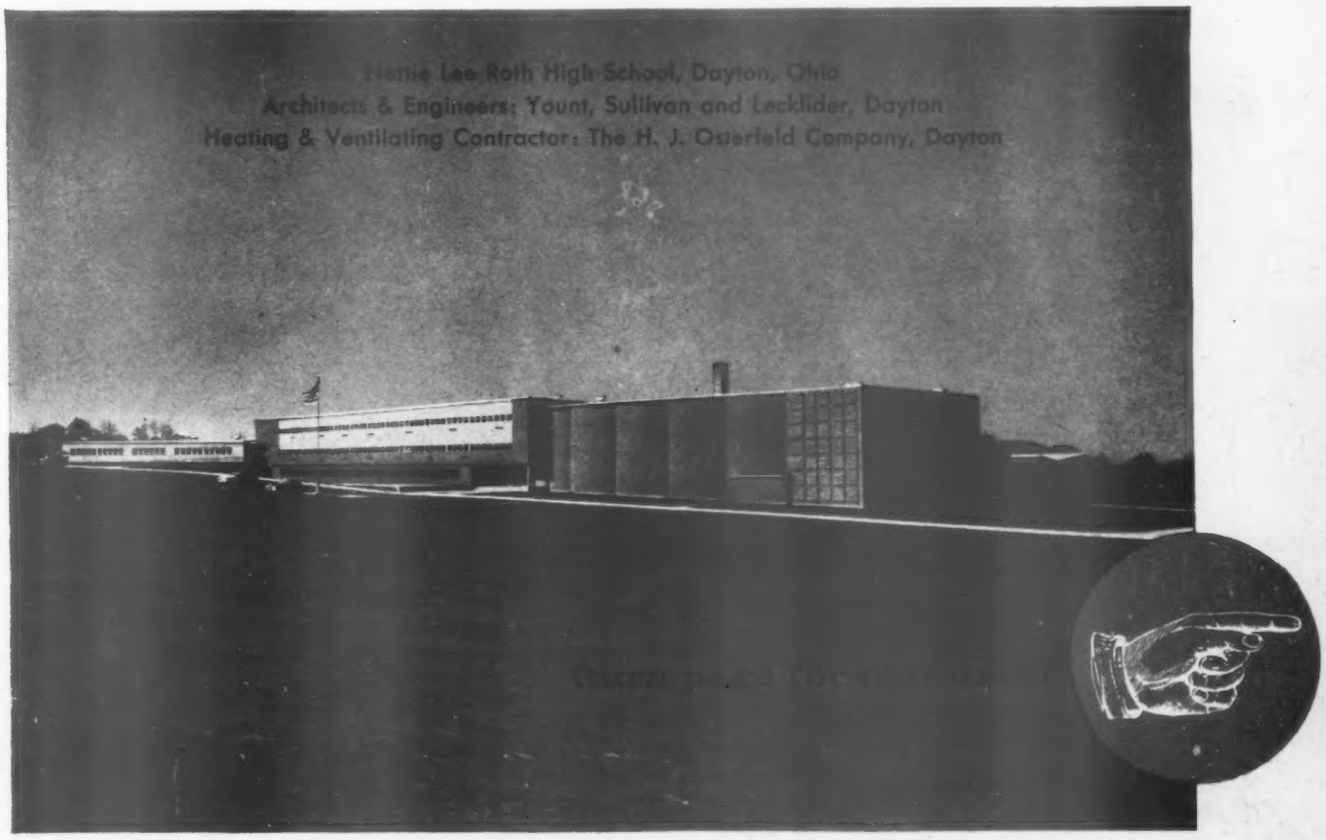
Another advantage of a complete air-conditioning system is that no additional capital investment, labor or materials would be required

continued on page 30

463rd SCHOOL

selects herman nelson "now or later" air conditioning

NETTIE LEE ROTH HIGH SCHOOL


Nettie Lee Roth High School, Dayton, Ohio
Architects & Engineers: Yount, Sullivan and Lecklider, Dayton
Heating & Ventilating Contractor: The H. J. Osterfeld Company, Dayton

New architecturally styled *kenyel-cool III* offers:

OPTIONAL COLOR, OPTIONAL FUNCTION, OPTIONAL AIR CONDITIONING

and Nelson flexibility brings the cost within any school budget

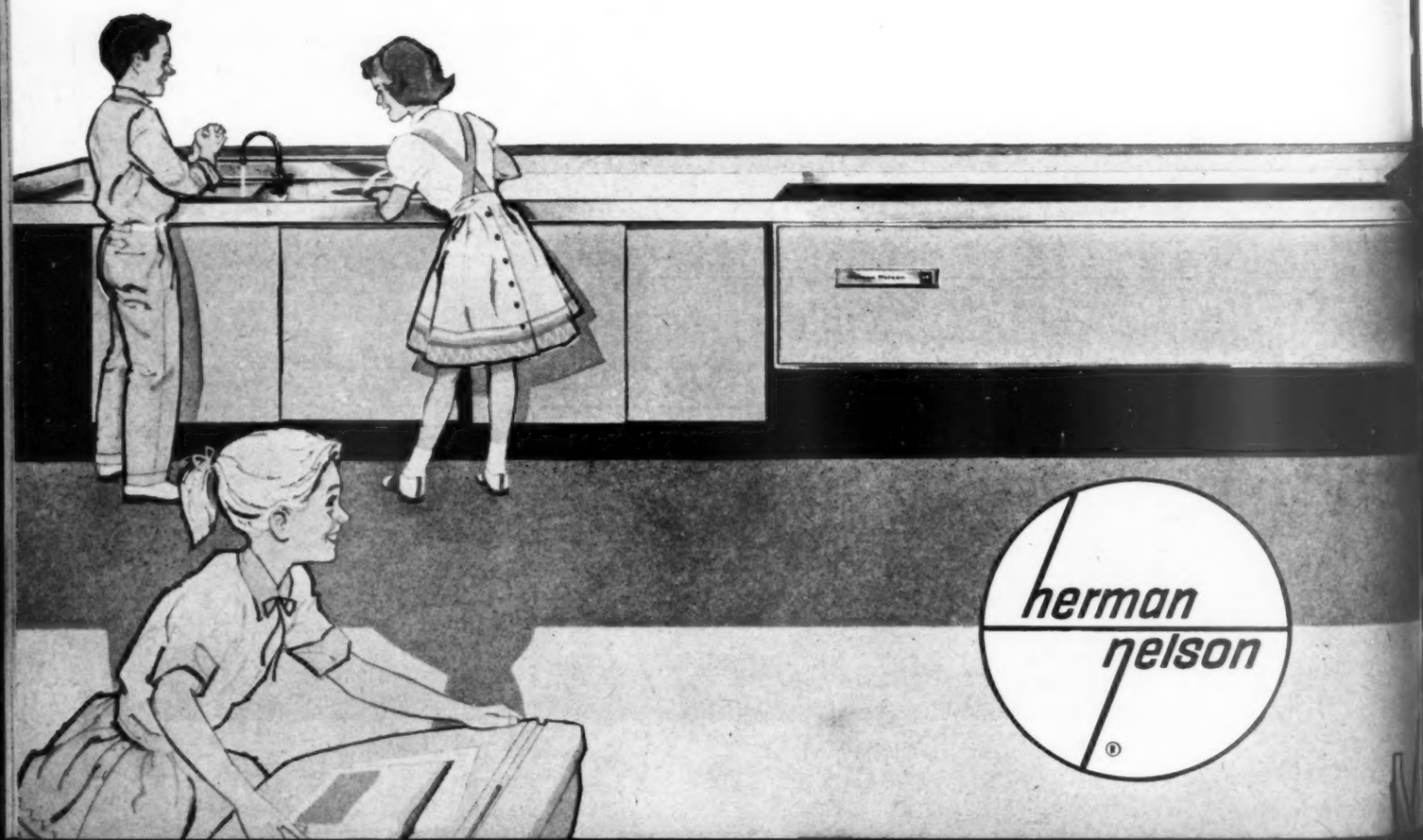
Herman Nelson – *the company that made air conditioning economically practical for schools by providing for it on an optional, "now or later" basis* – now offers brand new unit ventilator styling with *optional color* and *optional function,* too!

OPTIONAL COLOR! Your choice of unit ventilator equipment in six new decorator colors: Flame, Green, Blue, Salmon, Yellow and Neutral Gray.

OPTIONAL FUNCTION! Your unit ventilator accessory equipment can include (1) sink and bubbler unit, (2) sliding-door cabinets, (3) open cabinets, (4) magazine racks, (5) cubicle cabinets, (6) pull-out cabinets on casters, and (7) tote tray cabinets.

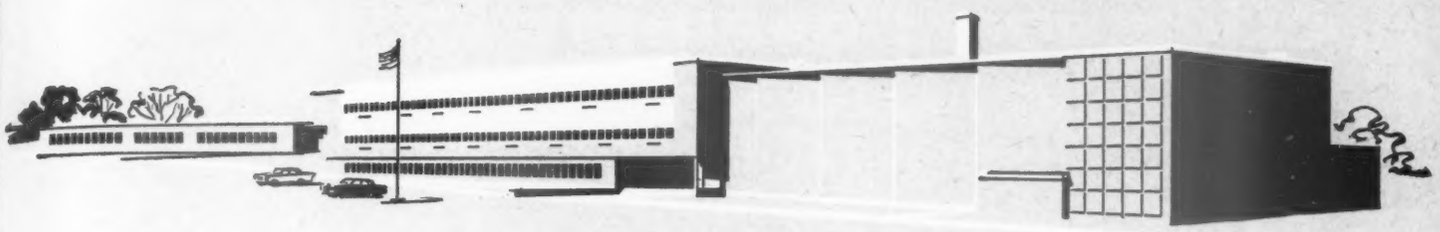
And Herman Nelson options (optional accessories, optional air conditioning) make it easy to tailor your system to fit your school budget.

This new-color, new-function, architectural styling is available on *all* Nelson unit ventilator equipment – whether the equipment provides for air conditioning or for heating, ventilating and natural cooling only.



COST DATA: NETTIE LEE ROTH HIGH SCHOOL

Nettie Lee Roth High School, Dayton, Ohio; Architects & Engineers: Yount, Sullivan and Lecklider, Dayton; Heating & Ventilating Contractor: The H. J. Osterfeld Company, Dayton.



at this price, can you afford not to provide for air conditioning?

The total heating & ventilating cost (including provision for future air conditioning) for Nettie Lee Roth school was $1.41½ per square foot. This cost is in the same range as that for schools in the area that *did not* provide for air conditioning!

And when the school *does* air condition, it can do so simply by adding a packaged liquid chiller in the boiler room at an estimated cost of just 55c per square foot – *about ⅓ the cost of actually installing even the lowest-cost air conditioning system.*

Now, 463 SCHOOLS have taken advantage of Herman Nelson's "now or later" air conditioning idea. They installed HerNel-COOL units at little or no extra cost, can air condition later at a great saving.

At this price, can you afford *not* to provide for air conditioning?

Mail coupon for FREE herman nelson FACT KIT on school air conditioning

Includes information on (1) how air conditioning affects the learning environment, (2) the cost of school air conditioning (including rule-of-thumb estimates you can use in your own planning), and, (3) the equipment for school air conditioning.

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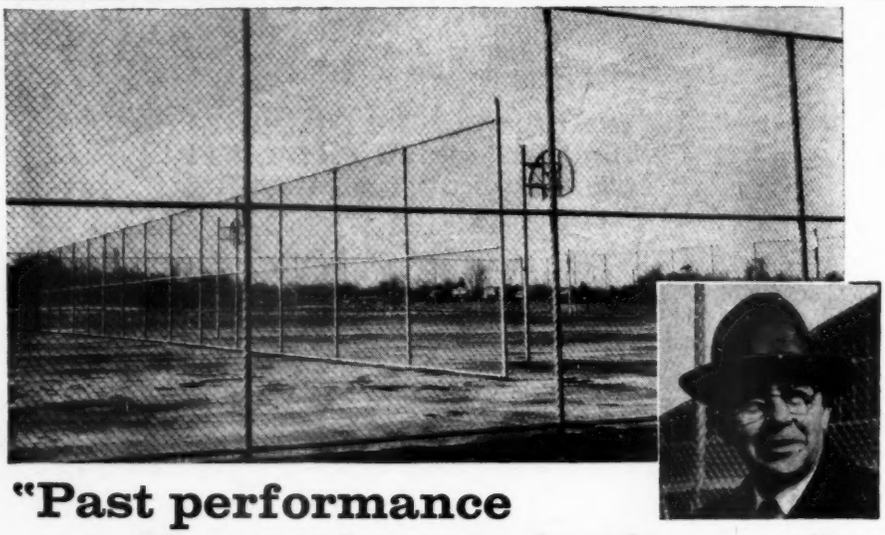

"Past performance predisposed us to Anchor . . ."

C. M. Gockley, Supt. Whitehall Township School District, Hokendauqua, Penna.

"About 25 years ago we installed Anchor Fence around the ball field at our old high school. When we built our new high school we were confronted with much the same problems of controlling admission to the athletic fields and preventing the children from running off the field into the street. Naturally, past performance predisposed us to Anchor Fence. Of course we advertised for bids. Anchor was finally picked because of its quality, lower cost, and minimal need for maintenance. As we expected, everyone concerned is very pleased with the Anchor chain link fence."

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should the school board decide to operate the school straight through the year for 12 months.

Design effects

Fire resistive construction will have a definite effect on insurance rates, tending to lower the rates almost to the vanishing point. Fire resistive construction must be of the most economical design in order to obtain the greatest economy in construction costs and insurance rates. This includes the elimination of all combustible trim. A totally fire resistive building tends to lower maintenance costs.

Insurance savings resulting from the installation of a completely automatic sprinkler system are not large enough to write off the capital investment for such an improvement in a reasonable period of time. Therefore, a sprinkler installation must be considered strictly as a fire protective device which not only assures the safety of life but also assures the unnecessary expenditures for replacement of a building which might be partially or totally destroyed by fire.

It is the opinion of this committee that the lowest cost, absolute safety protection for safety to life, would be a combination of protective equipment as mentioned below:

- Automatic sprinkler protection in all hazard areas such as basements, vocational shops, domestic science rooms, chemical laboratories, storage rooms, attic spaces, and in stair shafts whether open or enclosed.
- An automatic fire protection alarm system in the unsprinklered areas consisting of combination rate-of-rise and fixed temperature thermostats properly spaced in these areas.
- A standard manual fire alarm system with bells or sirens so located as to be audible throughout the entire premises and to be controlled by manual pull-boxes on each floor.

All three of the above devices should be connected through a central control panel so that all bells or sirens throughout the building would sound if: (**a**) a manual pull station is actuated; (**b**) a fire detector picks up a fire; (**c**) a sprinkler head operates. Where possible this same alarm should be transmitted automatically to either a central alarm station or to the public fire department.

It is the opinion of authorities on such matters that watch service, such as regularly recorded rounds report-

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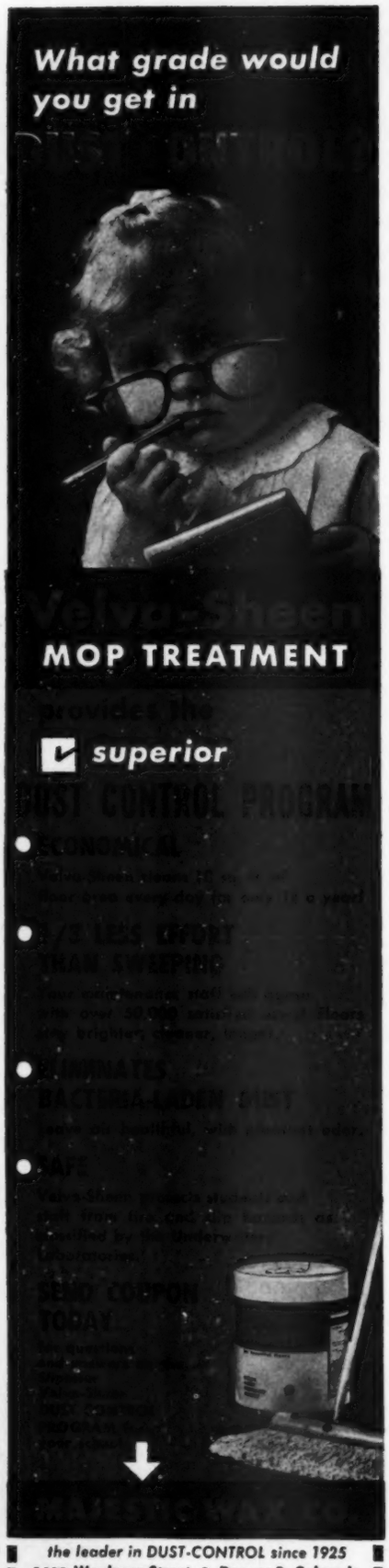

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ing to a portable or stationary clock, has no particular value in a school building other than the possible protection against vandalism. A system of fire and intruder electronic guard might have some value.

New school capacity

This committee wishes to point out that in assuming a 2,500-student capacity in the new high schools, we are considering this to be the average daily attendance figure. Thus, to achieve this average daily attendance it is anticipated that the enrollment will be about 10% greater, or approximately 2,800 students. In order to achieve an enrollment of 2,800 students it is assumed that approximately 3,125 student stations will have to be provided. In computing the cost per pupil we will use both the average daily attendance and the student stations. We can find no uniformity in Arizona among school administrators in selecting either of these student counts to determine cost per student.

Cost estimate

The following is our recommendation regarding budgeting of costs for this program:

■ Using a compact design, each of these three new plants will have approximately 200,000 square feet of building area excluding an auditorium. It is anticipated that this construction will cost approximately $14 per square foot or $28 million for building construction. In addition $300,000 should be allocated for paved parking and drives, athletic fields including bleachers, sprinkler systems, lighting and appurtenant facilities, tennis, basketball, volleyball, and handball courts, fencing, irrigation, landscaping and other required miscellaneous facilities. An allowance should be established for direct purchase by the district of all equipment and furnishings necessary for these new plants. Architect fees are excluded from our construction estimates but must be included in overall bond recommendations.

Assuming the construction item totals to be $3 million for each new high school, the cost per student based on average daily attendance of 2,500 would be $1,240 per student. Based on a student station count of 3,125, cost per pupil would be $984.

■ *Auditoriums.* It has been recommended by the Special Facilities Committee that auditoriums be included in the three new high schools. We assume that the capacity would be one-half the student body, i.e., 1,250, plus an allowance for faculty and staff. Based on a seating capacity of 1,300, these auditoriums could be expected to cost approximately $260,000. Additional allowance should be made for seats, stage equipment, etc., totaling about $40,000. This would indicate a total expense of approximately $300,000 for each auditorium.

Size of classrooms

This involves educational theories and practice as to the student-teacher ratio. If the classrooms are built on a 28-foot by 28-foot size they will be limited to a maximum of 32 students. If the classrooms are built 28-feet by 32-feet, this will allow a higher student-teacher ratio. We have been informed that high schools in California are presently using a 35-37 student-teacher ratio. This larger classroom size would allow a potential of 40 students. We assume that if the larger classroom size is used there will be fewer built per school, thus not appreciably affecting the total area and cost. However, it is obvious that considerable operational savings can be realized from the larger student-teacher ratio.

Additional high school sites

It is generally considered good planning to purchase new high school sites at least five years ahead of their projected use. Failure to do this always costs the taxpayer more, due to increasing land values as the new areas are built up. It would be a part of this committee's recommendation that approximately $400,000 be included in the bond recommendation for the purchase of two additional 40-acre high school tracts.

Continued review of plans

In conclusion, it is the further opinion of this committee that procedure be established to appoint a permanent citizens' committee to review all plans and specifications as they are developed. This committee should consist of members who are thoroughly qualified in construction, such as general contractor, an electrical engineer, mechanical engineer, structural engineer, architect. **End**

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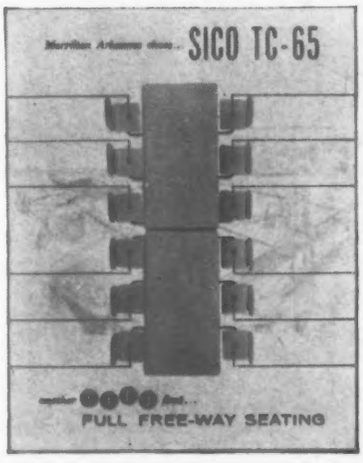
SICO Tables have one purpose—to provide efficient use of space for seating and eating. They are designed on the principle that the equipment for a room is actually more important than the room itself—for it's the equipment that determines whether the room will be functional. They are designed to fit the needs of the room exactly.

SICO has never compromised on the quality of its tables. And in buying school equipment, experience proves there's no substitute for quality.

FREE! For an illustrated booklet on how SICO Tables solved the seating problems of a school in Arkansas, write to:



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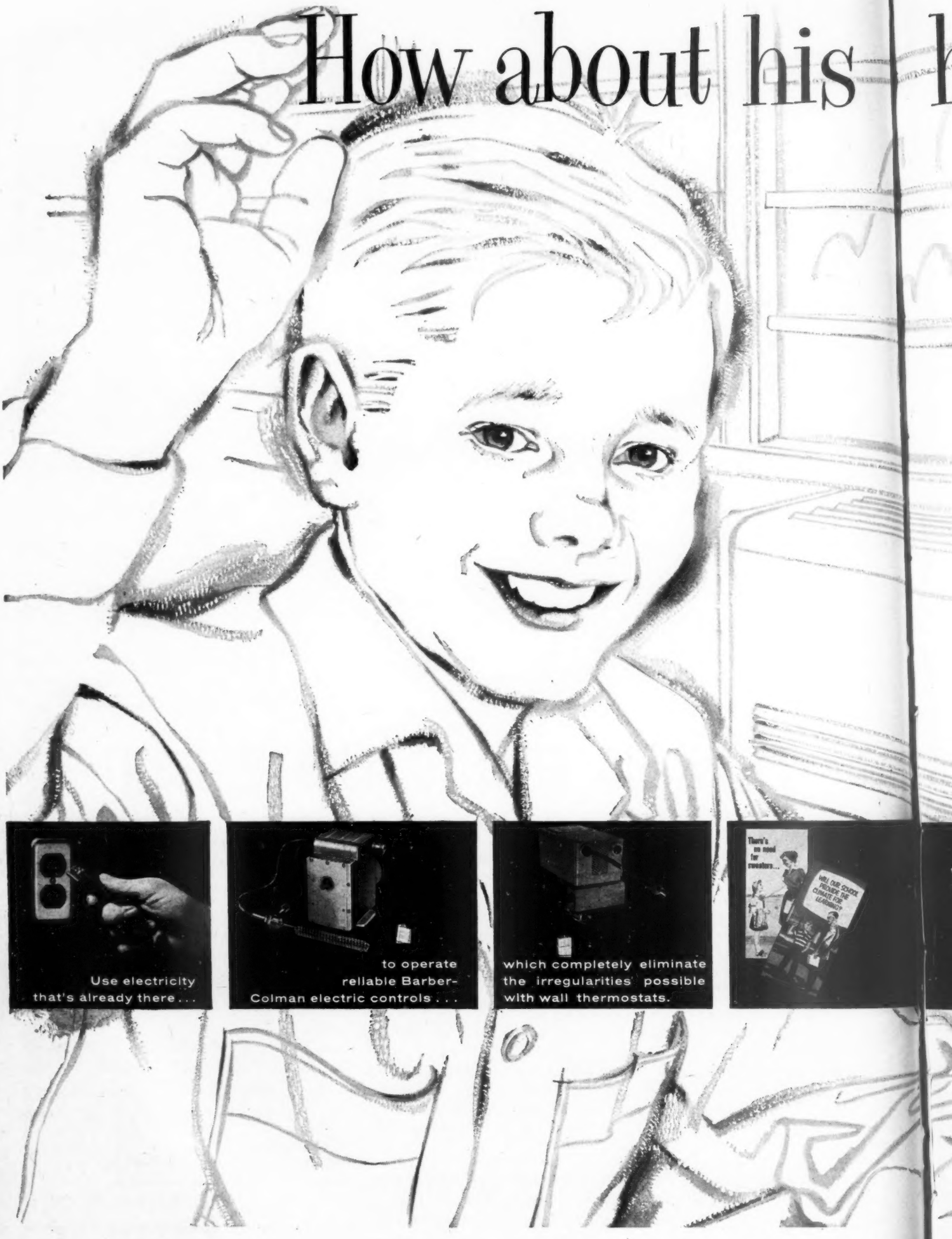

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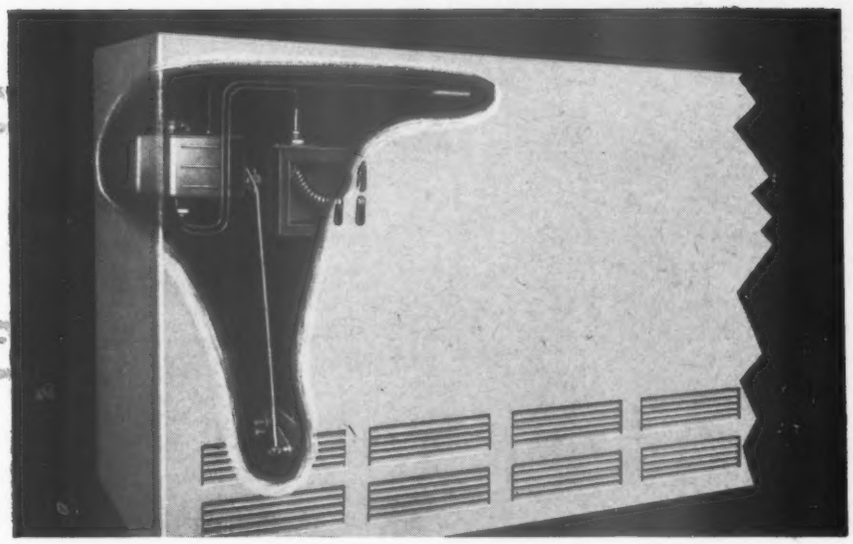

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Designs for school buildings. A new folder from Armco Drainage & Metal Products, Inc., shows how three architects solved one basic school building problem three different ways with rigid frame steel buildings. Illustrated in full color, the folder includes floor plans, descriptions and condensed specifications and credits.

For a free copy of this folder, circle number 836 on the Reader Service Card.

How to furnish a library. Open and closed library shelving, counter-height shelving and accessories, a convertible model study carrel and single-tier and multi-tier book stacks, are but a few of the library furnishing details mentioned in a bulletin published by Deluxe Metal Products Co. Color facsimiles are illustrated and some of the company's exclusive shelving features, such as bolt-less shelf brackets, finished end panels and cornice tops, are fully described.

For a free copy of this bulletin, circle number 832 on the Reader Service Card.

Roof care. A manual, describing and illustrating 14 common roof problems and recommending repairs and maintenance to overcome each, has just been published by Monroe Co., Inc. Discussed are such common problems as flashing damage, alligatored, blistered, torn and open seams. Various types of roofs are covered in detail and the products available for their protection are listed.

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Oil, grease absorber. Free samples of a specially processed sanitary mineral clay for absorbing oil and grease are offered by Canfield Oil Co. The product, in granular form, is spread on wood, metal or concrete floors to absorb soluble oil, lubricating oil, grease, acids and chemicals. It stays on the floor until saturated, then is easily swept off and can be re-used with soluble oil.

For a free sample, circle number 841 on the Reader Service Card.

Classroom projection meter. A six-page booklet from Central Scientific Co. describes its classroom projection meter, an instrument that projects AC and DC voltage and current readings on a screen or wall in lecture room or laboratory. The booklet features drawings and photographs showing a variety of ways in which the meter can be used for demonstration. Also contained are descriptions and photographs of suggested projector equipment.

For a free copy of this booklet, circle number 855 on the Reader Service Card.

Washrooms, receptacles. Installation tips, architectural specifications, unit size and capacity of washroom cabinets and dispensers are presented in an eight-page, full-color catalog from Crown Zellerbach Corp. Special emphasis is given to recess cabinets, featuring the firm's exclusive dispensing unit. Also includes rules-of-thumb on the number of fixtures and accessories required in various size washrooms, as well as suggested traffic patterns.

For a free copy of this catalog, circle number 834 on the Reader Service Card.

Lecturing with visual aid. Remedies for some of the basic errors frequently made in audio-visual presentations are given in a booklet by Dr. Emile Holman, M.D., available from the Ednalite Optical Co. The booklet deals with the proper use of all visual and auditory aids, the choice of equipment and the methods of making arrangements with hotel or lecture hall administrators for suitable location of speaker, equipment and audience. In addition, Dr. Holman tells how to arrange for proper personnel to operate equipment, how to provide for the comfort of speakers, how to meet minimum standards of amplification, how to use a microphone to best advantage, how to time slides and how to use an electric pointer.

For a free copy of this booklet, circle number 875 on the Reader Service Card.

Science room planning hints. A planning guide for physics, chemistry, general science and biology classrooms is included in a new catalog from Duralab Equipment Corp. The guide illustrates many suggested room layouts and roughing-in drawings as an aid to the architect and engineer in making details and drawing plans. The catalog also contains detailed information about the firm's complete line of science laboratory furniture and equipment.

For a free copy of this catalog, circle number 833 on the Reader Service Card.

Curtain wall catalog. Complete descriptions of curtain wall construction, mullion properties and profiles are featured in a 24-page catalog issued by Michael Flynn Mfg. Co. Twenty types of window arrangements are given and materials, construction and specifications are also fully treated. A curtain wall that includes built-in heating-cooling-ventilating in the walls is also discussed in the catalog, which features full-color photographs of typical installations.

For a free copy of this catalog, circle number 839 on the Reader Service Card.

16mm instructional films. The new Coronet Films catalog for 1960 contains descriptive information about some 950 of the firm's educational films. Divided into three major grade levels, the catalog lists films in almost every subject area of the school curricu-

continued on page 98

Is he learning...

or just being entertained?

He's learning... if the classroom audio-visual equipment is designed, as only Bell & Howell equipment is, to be an active educational aid rather than a medium of entertainment. The full benefits of teaching with audio-visuals can be achieved only through built-in features and controls that make the teacher the *complete master* of the lesson rather than a bystander. Only Bell & Howell gives these to you, along with unmatched ease of operation.

The school administrator gets the assurance of long, trouble-free equipment operation, and the certainty that the school has gotten the best value for its money. Program assistance and service is provided by an expert Bell & Howell Audio-Visual Representative in your area.

If you're going to specify audio-visual equipment soon... if you're interested in the added teaching power audio-visuals can give your school... write us today. There's no obligation. Education Dept., Bell & Howell, 7127 McCormick Rd., Chicago.

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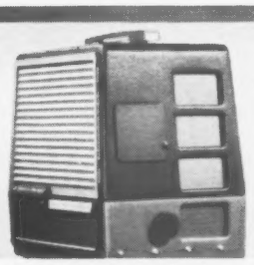
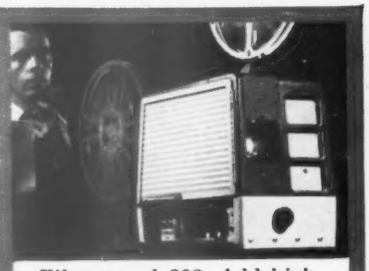
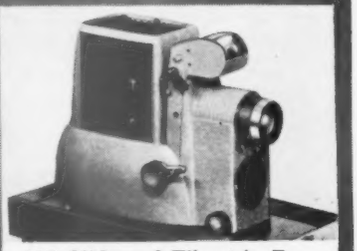


399AV. Stops on single scene for class discussion. Reverses instantly, lets you repeat scenes until they are clearly understood.



Filmosound 302. Add high-fidelity magnetic sound to any 16mm film, automatically. Doubles the value of language teaching film.

786AV-1. 2-Channel Tape Recorder. Teacher records lesson on one channel. Student listens, records answers on second channel.



724 Slide and Filmstrip Projector. Simple instructions on projector. Projects even in semi-lighted room to permit note-taking.

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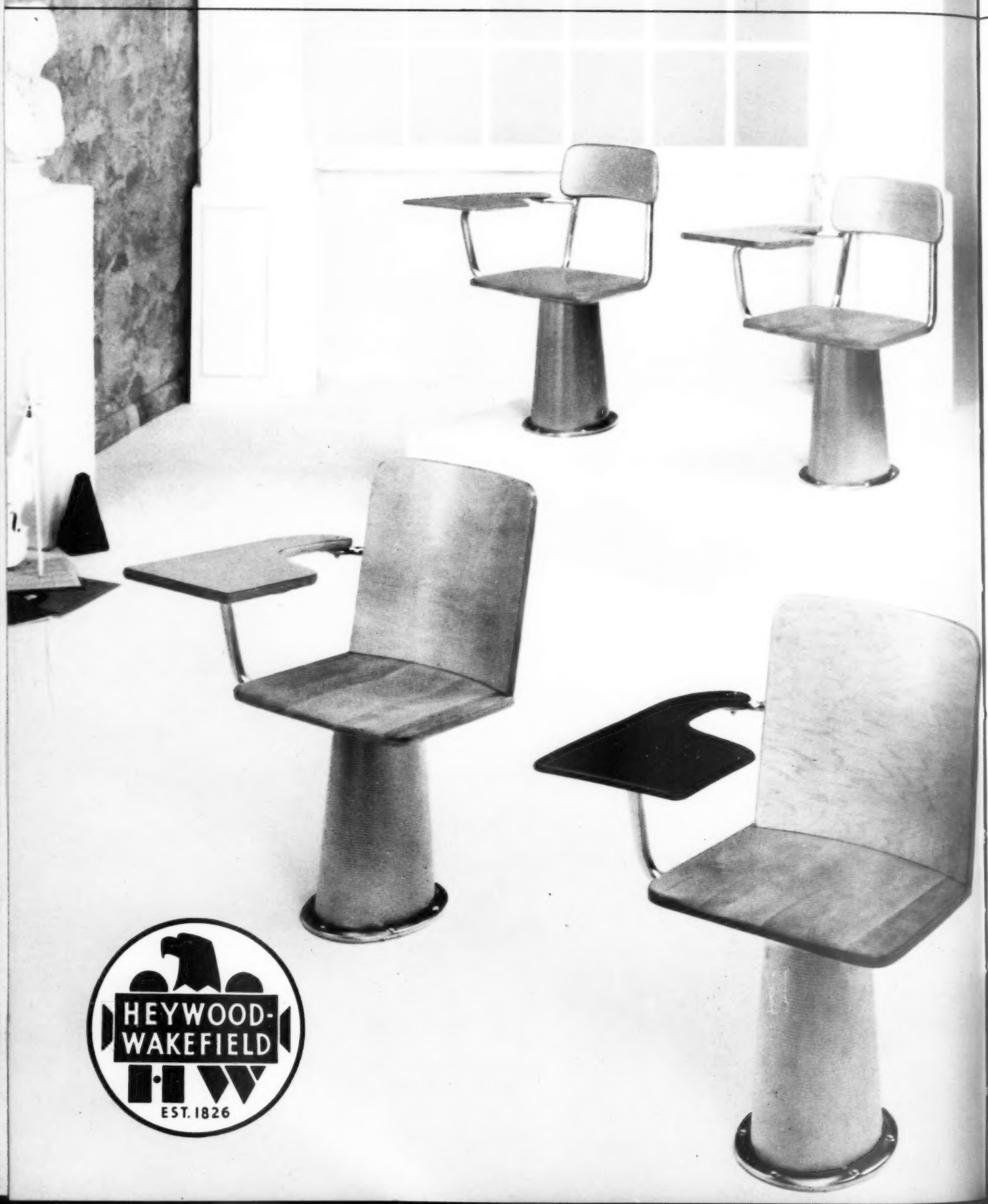

HEYWOOD-WAKEFIELD

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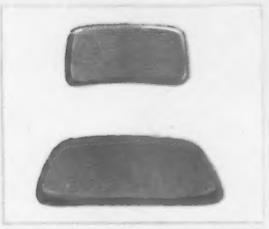
FLEXIBILITY, DESIGN, STYLE, COLOR *plus* RUGGED DURABILITY IN A WIDE VARIETY OF FINE SCHOOL FURNITURE

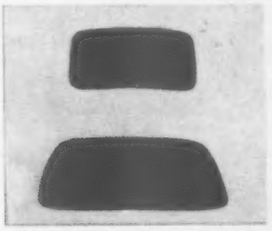
Flexibility! What are your needs or preferences in top-quality school furniture? Whatever these may be, THE HEYWOOD LINE meets your individual, specific requirements. In desks, chairs, combination units, tablet arm models, specialty pieces, and all other types of school furniture, THE HEYWOOD LINE offers you an infinite variety of styles, designs, materials, colors, to best suit your needs.

Featured in THE HEYWOOD LINE of school furniture is the exclusive and patented solid plastic, called HeyWoodite. This new and proven material won't stain, won't burn, won't break . . . and requires no maintenance, no refinishing, no repairs. Whether you buy THE HEYWOOD LINE in solid wood, plywood, laminated plastics, or HeyWoodite solid plastic, you have the positive assurance that you could not possibly have made a better choice. For new school furniture, or replacement units, call on Heywood-Wakefield, famous for fine furniture for 135 years!

HEYWOOD - WAKEFIELD
School Furniture Division
MENOMINEE, MICHIGAN • GARDNER, MASSACHUSETTS
NEWPORT, TENNESSEE



Seats and backs are available in solid, kiln-dried hardwoods for long wear. In attractive natural finish, seats and backs are shaped and saddled for utmost comfort. Scientific ratio of pitch meets good posture standards.

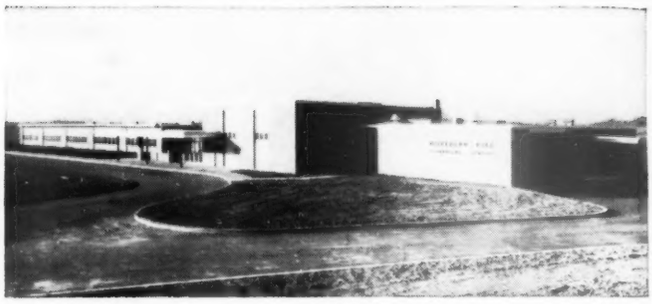


Seats and backs in Heywood's exclusive solid plastic, called HeyWoodite, require no maintenance. The colors run all the way through. Seats and backs are molded, shaped, and saddled for best seating posture. No other material can outwear HeyWoodite in seats, backs, desk tops, and tablet arms.

The HeyWoodite tablet arm is molded, shaped, and scientifically proportioned at a comfortable writing pitch. Like all other Heywood-Wakefield school furniture parts made of this indestructible, patented solid plastic, HeyWoodite tablet arms come in four colors that won't wear through, fade, or discolor.

Easy ingress and egress are a functional part of Heywood tablet arm units. The laminated tablet arm is bonded to a high quality, solid hardwood core for permanency, strength, and long service. It is rigidly mounted to the tip-proof steel chair frame.

Heywood-Wakefield's auditorium seating line includes fixed and movable units for every school use. It includes chairs with veneer seats and backs, models with spring and rubber cushions, and those with padded or spring-filled backs. There is a choice of wood or steel end standards and an option on self-rising seats. There is a wide range of fabrics, metal colors, and wood finishes. Portable seating and folding chairs by Heywood-Wakefield are the most luxurious in the country!



Monroeville School District is so well satisfied with its first electrically-heated school building that it is now planning to build another which will be heated in the same manner. The first building, shown above, the Northern Pike Elementary School, was first occupied last December 1. Schoolboard officials and administrators say they consider it a success from every point of view. The second building will be a 20-room structure in University Park.

CHROMALOX

Electrically-heated school triumphs over high costs

from Pittsburgh Sun-Telegraph
June 28, 1959

Classroom in Northern Pike Elementary School . . . it's warm in winter, cool in summer.

. . . one of over 250 electrically heated schools.

The cost of heating the Pittsburgh district's first all-electrically-heated and equipped school during the past winter was less than had been expected, according to school officials and the designers and manufacturers of the equipment. It is Northern Pike Elementary School at Monroeville.

According to the figures revealed after the severe winter's heating bills were all in, the cost will not exceed $4,700 per year for electricity. The original estimate, before the heavily-insulated building was built, was $5,330 per year.

The estimated cost of heating with other fuel was $5,720, including payment of principal and interest on the extra initial cost of the building, maintenance cost of boilers, higher insurance, etc.

Designers of the electrically-heated school say initial cost savings in construction amount to $53,000 rather than $41,500 as had originally been estimated.

The Northern Pike school contains 13 classrooms, a multi-purpose room which serves as an auditorium, playroom and cafeteria, a kitchen and administrative offices. It accommodates 250 children.

The school is heated principally by modern baseboard electrical units thermostated so that the body heat of the children, the sun which shines through windows and the heat from cooking in the cafeteria kitchen is not wasted. A constant flow of fresh air is pumped into the rooms from the outside.

Dr. Carl Newman, superintendent of Monroeville schools, says the operation has been entirely satisfactory from a comfort and health standpoint as well as from a cost point of view.

The architect of the original building was Walter E. Schardt Associates; the manufacturer of the equipment, the Edwin L. Wiegand Co.; the electrical contractor, Morganstern Electric Co., and the general contractor, Spires Brothers.

Write for "The Dollars and Sense Story of Electric Heat." Edwin L. Wiegand Company, 7500 Thomas Blvd., Pittsburgh 8, Pa.

91896

(Circle number 755 for more information)

SM NEWS OF THE SCHOOLS

A digest of current happenings in public education

Students walk out of school when adults fail big test

Ninety percent of the students in the East Central Rural High School in Bexar County, Tex., walked out of school recently in protest over the failure of adults to pass a bond issue.

Principal C. O. Spray said that the 350 students were just "showing their displeasure at the failure of the bond issue." The student body had spearheaded a drive in support of the bonds. The vote on the $750,000 issue was 601 to 514 to defeat it. The school faces loss of accreditation in September unless facilities are improved.

School to hire collegians to correct student papers

College juniors and seniors will be hired by the Strongsville, Ohio, high school next fall to act as clerical assistants to the teaching staff. They will be asked to grade tests and themes in the subjects in which they are majoring in college.

Strongsville's schools have been understaffed for a number of years and, according to School Board President James H. Beam, teachers have been asked to undertake a heavy load and still do a lot of after-school work that could be done by clerks.

Under the Strongsville plan the college students would handle only the mechanical aspects of grading. On compositions, the teachers would also read the papers to judge the quality of work.

The schools expect to draw most of their collegiate clerks—who will be paid $1.50 an hour—from nearby Baldwin-Wallace College. It is estimated that a part-time clerk would earn about $2,000 during the school year.

"Perform or else" policy lifts grades for students

A new "perform or else" policy adopted last November by the Sequoia Union High School District in Redwood City, Calif., is paying big dividends, according to Superintendent Rex H. Turner.

The basic principle of the policy is that a student who fails half of his subjects will be classed as a habitual failure and may be recommended for expulsion or exemption.

Previously such action was not considered unless the students were habitual truants. The new rule is aimed basically at students who are achieving very little but who could be performing better.

Under the new policy, 233 students were put on probation during the last year in the district's five schools. Conferences with parents and students brought such improvement in the work of more than 200 that there was no need to recommend any stronger disciplinary actions.

Thirty-two students, 14% of those on probation, had to be recommended for exclusion from the school.

According to Superintendent Turner, this is a very good showing. "It shows that in most cases when a youngster has the pressure put on him, he will come through," he said.

Sick leave payments changed to aid retiring teachers

Teachers who retire from the Houston, Tex., school system are going to get an important tax break under a new rule adopted by the district. Cumulative sick leave payments will be withheld until the year following the one in which the teacher retires.

Under present policy, when a teacher retires his sick leave money is given

Too good to miss . . .

Guides students . . . A child's environment can be a big factor in deciding the life he chooses to lead. In Coventry, R. I., State Senator William Fecteau told of a student who wanted to be a doctor. Then the schools became overcrowded and his class was housed temporarily in a fire department. As a result, the medical profession has lost one recruit—the boy now wants a career as a fireman.

Bores students . . . The ultimate in audio teaching aids has been reached in China. The government there is experimenting with 10-hour long-playing records of lectures and texts for high school and college students designed for use in a single sitting. Pretty dull stuff, we'd guess.

Ousts students . . . Many schools in the nation were closed during the spring by flood waters, but students in Whitehall, N. Y., were ousted for just the opposite reason—there was no water. Seems the village's main water line was being repaired, cutting off water to the school building. So, while all around them students were battling surging waters, Whitehall's students were left high and dry. Perhaps some flooded school would ship an emergency supply.

Feeds students . . . In Mount Pleasant, Mich., researchers are feeding elementary school students raw carrots on crackers. This "appetizing" fare is designed to stimulate the youths' taste for foods with high nutritional value. The idea is to find out what good foods students will and won't cotton to, so a realistic nutrition education program can be developed. That sounds good but raw carrot *on* crackers? Personally, we're more addicted to yogurt and wheat germ.

to him as part of his last check. This often amounts to upwards of $3,000. Since the teacher has been employed during the year, the extra money is taxed at a high rate.

If payments are held until after January 1, it is estimated that teachers will save as much as 30% on income taxes.

Committee recommends end of school-less superintendents

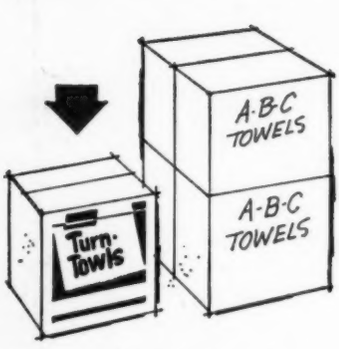
Abolition of the office of county superintendent in 26 of the 114 counties of Missouri was recommended there recently by the Missouri Public Expenditure Survey. No school districts come under the jurisdiction of the county in these areas.

"There is little left in these counties for the county superintendent to do, and the minor duties that remain, assigned to him by state law, could be discontinued or assigned to other officials by the legislature," the survey said.

The committee recommended state legislation that would automatically abolish such posts when no school districts are under the county's jurisdiction. It also suggested that when reorganization has left a county superintendent with a substantially reduced number of districts to supervise, the duties and expenses of the county's office should be reduced by law.

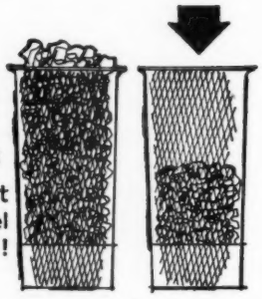
MOSINEE TURN-TOWLS

produce hidden cost savings



Less Maintenance Cost

Turn-Towl cabinet control cuts towel consumption 50%!



Less Storage Space

One case of Turn-Towls goes as far as four cases of ordinary towels!

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Subsidiary of Mosinee Paper Mills Co.

Write for the name of your nearest distributor.

(Circle number 710 for more information)

Book recommendations cause troubles in California

Books and the fears that some people have of them, are causing problems in all parts of the country. Now it's the California Teachers Association that is investigating a case where a teacher was transferred from a school for putting such novels as Ernest Hemingway's "The Sun Also Rises" on a senior reading list.

Teacher Mardel McCullough was transferred from San Jose's Andrew Hill High School after parents had protested five books she had placed on the recommended reading list. Other books that disturbed the parents were J. D. Salinger's "Catcher in the Rye," Aldous Huxley's "Brave New World," Thomas Wolfe's "Look Homeward Angel," and "The Human Comedy," by William Saroyan. The books were removed from the school library.

Anne J. Freedland, school board vice president, declared that the board "certainly had nothing to do with removing these books. Frankly," she said, "I don't know who did. We are definitely investigating the case."

Walking can be fun, Pittsburgh students find

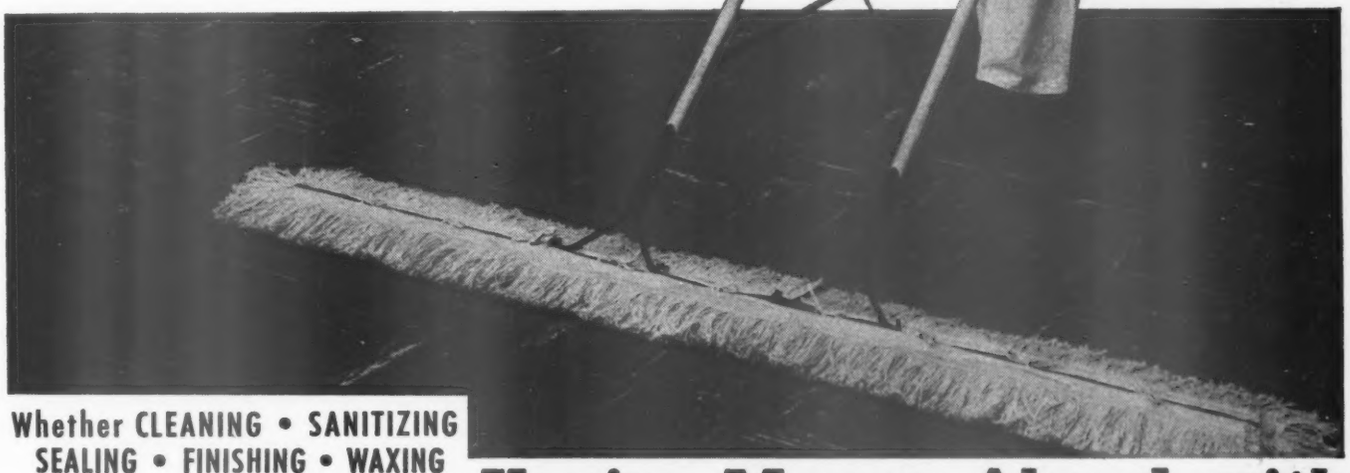
Elementary youngsters in Brentwood School District, Pittsburgh, now hike enthusiastically to and from school as a result of a "Walk for health" program endorsed by C. A. Sherman, superintendent. Pocket-sized pedometers tell students at a glance how far they've walked, the only factor considered in a schoolwide competition.

Leo Harrold, principal of Elroy School, initiated the program when he discovered that 40% of one fourth-grade class was being driven back and forth by parents in fair weather or foul—though few lived more than one mile from the school.

Now most of the youngsters pass up the family chariot in order to pile up points awarded for distance traveled daily—on foot.

The hike-a-thon is part of a broader program of physical fitness recently launched in the district's elementary, junior and senior high schools. Exercise apparatus—fashioned out of scrap lumber by school shop classes—is being used by 98% of the elementary school pupils on their own time. And

Germ-Laden Dust!



CUT SWEEPING TIME Don't just push dust around–pick it up with SUPER HIL-TONE® surface maintainer, and get rid of it once and for all. Saves labor time–protects against spread of air-borne bacteria –helps save the floor and improves appearance.

SUPER HIL-TONE has the unique property of AD-SORB-ING dust (gathers and holds, with a kind of magnetic attraction). Pulls the dust cleanly up off the floor, and holds it in the sweeping mop. Leaves no tell-tale trail.

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even fathers are getting into the act with some 180 of them showing up regularly in school gyms on Dad's night.

"Right-to-know" law threat to Connecticut schools

A "right-to-know" law, passed by the Connecticut legislature in 1958, may prove a serious threat to the privacy of records, IQ scores and other confidential materials held by schools in that state.

In an advisory opinion, the corporation counsel of West Hartford, Conn., Nicholas A. Lenge, has ruled that a broad range of documents and files must be made public. Specifically included are such items as preliminary budget drafts and children's IQ records.

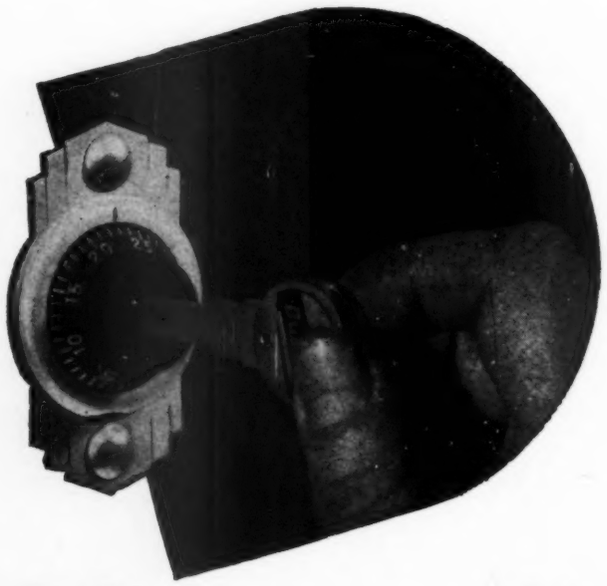
Other documents that must be made public under Lenge's ruling are:

- Communications, memos and reports prepared by administrative or supervisory staff for the superintendent, whether or not transmitted to the board.
- Communications prepared for the board of education by the school staff.
- Communications from other town bodies.
- Private communications from members of the public.

The schools can refuse such information only on grounds that to release it would adversely affect the public security, the financial interests of the town or the reputation or character of any person. If the schools do invoke any of these reasons, they must be prepared to face appeals to the state courts.

No actual test case has yet come before a court.

How **DUDLEY** gives you the best in Combination Locker Locks

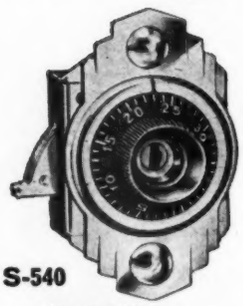


Quick combination **Change**

As lockers are reassigned at semester's beginning, it is a simple matter of only a moment to establish a new combination for the built-in Dudley Lock.

The Quick-Change Key, inserted in the lock, allows the selection of another 3-number combination, regardless of what it might have been before. Thus, no pupil is able to open the locker formerly assigned to him, and the safety and security of the lock system is maintained.

This is just one of the many advantages of Dudley Locks which have made them such favorites for 39 years with school people everywhere.



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Master-Keyed Built-in Lock

Rust resistant case with anodized aluminum escutcheon plate, fits all locker piercings. 40 divisions marked in white on black enamel.

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The standard of controlled locker protection since 1921

(Circle number 720 for more information)

Elementary pupils participate in advanced program

First-, second- and third-graders at Sidney Pratt school, Prospect Park, Minneapolis, Minn., are learning simple Chinese phrases. Others in the school—in grades four, five and six—and getting a taste of elementary algebra. Still others are dabbling in atomic physics, German, Russian, astronomy, creative writing, art, current affairs and recreational reading.

It's all part of an eight-week special-interest program now being tested at the school. Only the 70 kindergartners in the school's total enrollment of 400 youngsters are excluded.

The special classes are held each Thursday during the last hour of school and are conducted in some instances by parents and university people who volunteer their time. Parents and children are allowed to make their own selections of special-interest classes, though teachers follow up their first choices to insure that individual children are interested and able enough to pursue the special study.

After the advanced program has completed its eight-week run, Orville B. Aftreth, Pratt principal, plans to evaluate the results of the experiment.

Experiment puts college courses in high schools

Four high schools in the City of Pittsburgh are participating in an Advanced Placement program with Carnegie Institute of Technology which brings the college-level courses to the pupil in the high school, rather than taking the pupil who has completed his junior year in high school and entering him in freshman college courses.

The courses offered are American and European history, and English. Allderdice High School offers all the courses to eligible seniors. Peabody High and South Hills High have AP

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Beauty and duty are more than skin deep

If you buy school furniture, you're probably a good judge of appearance. But how well do you do when it comes to judging how long it will last or how well it will perform? Here are a few tips which should prove helpful.

Examine and compare the furniture itself. See that desk tops are smooth and rigid. Try the drawers for smooth, quiet action. Is the furniture carefully finished inside and out? Is it Bonderite treated to give a permanent, protective and lustrous finish that lasts for years? These are important for prolonging the life of your school investments.

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See your ASE Dealer. He will be glad to show you the complete line of desks, chairs, files, tables, bookcases, storage cabinets and lockers, or write today for our newly illustrated ASE School Catalog.

ALL-STEEL EQUIPMENT Inc.
Aurora, Illinois

(Circle number 702 for more information)

courses in English and European history; Perry High, in English.

A grant of $87,500 from the Ford Fund for the Advancement of Education and the A. W. Mellon Educational and Charitable Trust was made to Carnegie Tech for the program. Last summer selected teachers from the Pittsburgh system attended a month's institute at Tech where the courses of study were developed. Thirty-two teachers and four professors worked together, with salaries paid by the grant.

Classes are limited to 20 pupils and $30 is available for books for each pupil in the course. Teachers teaching the advanced courses have only four classes a day. The grants pay for the necessary teacher replacements.

Pupils are selected on the basis of ability and ambition, thorough IQ, psychological and placement tests, grades, recommendations of teachers and counselors and other tests. All are invited to register—the courses are voluntary.

At the end of the school year the pupils will take exams set up by professors of the National College Board and, if they pass, will be admitted to college with full credit for the courses completed.

At Allderdice High School two of the college professors are teaching these courses to the seniors eligible for it, on a year's leave of absence from Carnegie Tech.

Costs to non-metropolitan school districts for similar programs with local colleges are felt to be negligible, and it is thought that foundations in various localities would be willing to aid in the program.

Motor scooter problems beset Connecticut board

Senior and junior high schools in wealthy Darien, Conn., have closed their grounds to motor scooters, go-carts and other mechanically or chemically propelled vehicles that might come into the possession of their students.

About 200 students in the schools have been arriving in various undersized vehicles. Police and school officials have found that they constitute a hazard. The decision to ban them was taken by the schools as a safety precaution.

The decision is actually more far-reaching than that. Also coming under the ban are such items as powered model planes, missiles and other triumphs of teen-age ingenuity. The only exceptions to the rules are those vehicles or instruments operated under the instruction and supervision of faculty members or under the sponsorship of a responsible organization.

Mississippi votes to let governor veto textbooks

The State of Mississippi has decided that it's dangerous to allow educators to decide what books they will use in the schools. The legislature has voted to give the governor full control over the selection of textbooks for public schools.

The bill was passed at the urging of the Daughters of the American Revolution who charged that subversive teaching was creeping into the state's schools.

In voting against the measure Senator Bill Caraway of Leland, Miss., said the bill was a "direct slap" at the teaching profession in Mississippi. "I voted to starve them [on a pay rise bill] but I'll not insult them," Caraway declared. "I had rather trust them than some of the people I have seen hanging around the governor's office looking for jobs."

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As to cost: Honeywell Maintenance Agreements are based on the size and number of controls in your installation. They run one full year, are renewable every year, and their low cost can be included in your yearly budget.

A Honeywell man from your local office will be glad to tell you the exact cost of a Honeywell Agreement for your particular installation. No obligation. Call your local Honeywell office today, or send in the coupon for the complete story of Honeywell's money-saving Maintenance Agreement.

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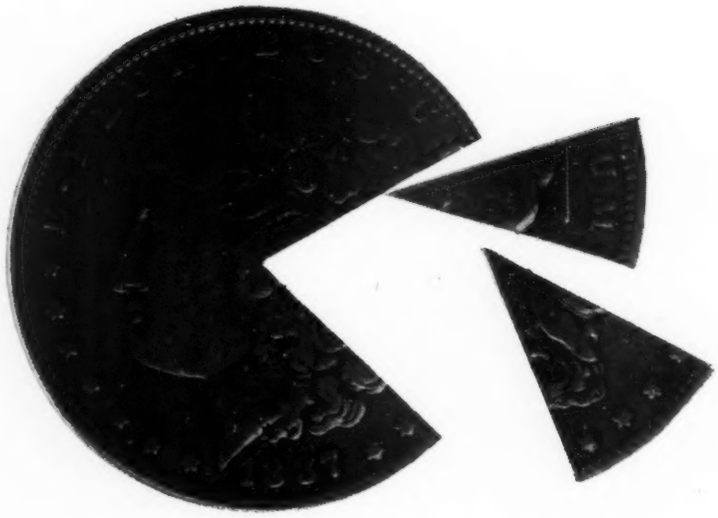
THE THIRD INSTALLMENT OF SCHOOL MANAGEMENT'S



How much can a district pay for debt service and capital outlay?

Editor's note: *School Management's* Cost of Education Index study was designed to become a tool for schoolmen on the local level. It is meant to aid you in preparing your budgets. It can be useful in comparing your own district with others in your area, of your size and of your wealth. The CEI can provide material for a public information program, legislative action, and many other activities in which school people often find themselves involved.

Because it was designed to be used by schoolmen, publication of material is being tailored to your needs. Many requests have come in during the last few weeks for specific information on debt service and capital outlay payments. For that reason, we are publishing this information immediately. In the July issue we will resume our reports on current expenditures, coming in close on the costs of plant operation and maintenance.

■ ■ ■ There is a popular notion that debt is something a prudent man avoids. Despite this idea that going into debt is bad, a positive relationship can be found between debt service payments for school buildings and the quality of education children receive.

No one in his right mind would say that those communities which go deeper and deeper into debt have the best educational programs. The real key is to *balance* your district's expenditures.

Rapidly growing communities often find it necessary to go into debt in order to provide adequate school housing. As long as this does not threaten a school district's ability to provide adequate funds for current operations, it is a sensible way to spread the cost for housing children over a number of years.

The question, then, does not become a mat-

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In this third report on SCHOOL MANAGEMENT's Cost of Education Index study, the problems of debt service and capital outlay—and their relationship to current expenditures—are examined in detail. As the article shows, there is a definite correlation between the amount of a district's debt and the education it is offering.

ter so much of *whether* a school district should go into debt to construct buildings, but *how much* of a debt it should allow itself to assume. In other words, when do a community's debt service payments begin to detract from that community's ability to pay for its current educational program? CEI will help you find an answer.

First, it's worthwhile to examine another study made a few years ago on this subject. The Associated Public School Systems, a group of some 230 leading districts across the country, under the guidance of Dr. Paul Mort, determined a rough scale for evaluating the effect of debt service on the quality of a district's education. According to Mort, when the debt service payments of a normal school district exceed 25% of the amount spent on total current expenditures, payments for buildings are being made at the expense of the current educational program. School quality suffers.

Here is how this would work in practice. If a school district is spending $200 per pupil (*using "expenditure pupil units," see box, below*) for total current expenditures, its debt service payments and capital outlay combined ordinarily should not exceed $50 per pupil. If they do, the likelihood is that the district is now, or will

HOW TO COMPUTE PER PUPIL EXPENDITURES FOR YOUR DISTRICT

It takes more money to educate a high school pupil than it does to educate a student in elementary school, according to Dr. Orlando F. Furno, of the U. S. Office of Education. And, because of the effects of sparsity, small schools have to spend more for the same educational services than large schools. Therefore, CEI's per pupil cost figures are based on "expenditure pupil units," rather than actual number of students.

Here's how expenditure pupil units were computed by Dr. Furno: Schools with an average daily attendance of less than 317 on the elementary level or 695 on the secondary level received a sparsity correction *(see below)*. Next, because for every dollar spent on an elementary pupil, $1.30 must be spent to educate a secondary student, secondary ADA was multiplied by 1.3 and then added to the elementary ADA. The resulting figure is called "expenditure pupil units."

To find out your district's per pupil costs, in terms of the figures given in the CEI, multiply all your elementary school pupils by one, all your high school pupils by 1.3. The total obtained is your number of *expenditure pupil units*.

Here's an example: District A has 2,000 elementary school pupils, no students in high school. District B has 2,000 high school students, none in elementary schools. District C has 1,000 elementary pupils and 1,000 high school students. If each district's net current expenditures total $500,000, District A's per pupil expenditures would be $250, ($500,000 divided by 2,000 students multiplied by one). District B's per pupil expenditures would be slightly more than $192, ($500,000 divided by the result of 2,000 multiplied by 1.3). District C's per pupil expenditures would be about $217, ($500,000 divided by the result of the total of 1,000 and 1,000 multiplied by 1.3).

In this case District A is spending more money per pupil than Districts B or C, despite the fact that all are the same size and are spending the same *total* amount.

With these weighted per pupil costs, it is possible for a district to compare itself with any other district in the nation, no matter what its pupil make-up.

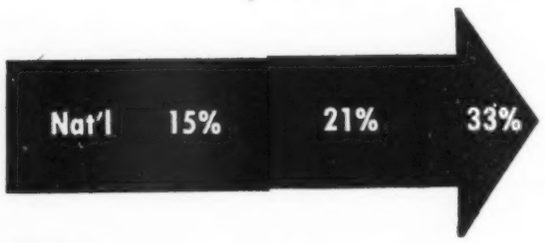
If your district has less than 317 pupils in ADA in elementary schools or less than 695 pupils in ADA in secondary schools, a sparsity correction must be made to get your district's expenditure pupil units. If you will send a postcard to *School Management*, giving your school's elementary ADA and secondary ADA (separately), SM will calculate your expenditure pupil units for you.

soon be, taking money from the current educational program to meet debt payments.

This might, of course, occur at any point in any given community. Another district might be spending only $10 per pupil on debt service and $200 on current expenses and still find it impossible to substantially raise its income for capital outlay and debt service without taking money from current expenditures. Another district might meet this point of resistance when its debt service payments totaled 30% of total current expenditures. Mort's study, however, tended to show that 25% was the point at which *most* school districts ran into difficulties.

WHAT PERCENTAGE ABOVE CURRENT EXPENDITURES IS FOR HOUSING?

The percentage above total current expenditures being spent by half, one quarter and one-tenth of the nation's schools during the 1959-60 year.



	Average	Quality quarter	Top tenth
REGION			
1	8%	15%	17%
2	15	21	30
3	16	24	34
4	14	18	21
5	9	19	23
6	19	23	38
7	14	18	26
8	18	26	42
9	12	20	25
DISTRICT SIZE			
1 (above 25,000)	17%	24%	36%
2 (12,000-25,000)	14	20	29
3 (6,000-12,000)	14	20	29
4 (3,000-6,000)	15	20	26
5 (1,200-3,000)	15	20	32
6 (600-1,200)	14	20	27
7 (300-600)	11	17	22
EXPENDITURE LEVEL			
1 ($0 to $199)	13%	20%	35%
2 ($200 to $299)	16	22	32
3 ($300 to $399)	14	20	27
4 ($400 and above)	10	11	11

IS YOUR DISTRICT BURDENED WITH TOO MUCH DEBT?

About one out of every 10 districts in the United States may be spending too much on debt service and capital outlay, in relation to what they are spending for their current educational program. They are spending at least $1 on these items for every $3 earmarked for total current expenditures according to the CEI study (*see arrow on this page*).

The possibility is very real that, in these districts, dollars which should be going into the current educational program are being siphoned off into capital outlay and debt service payments.

(Percentages given are the amount that capital outlay is of total current expenditures. Thus in a district spending $100 per pupil on current expenditures, 33% would indicate that the district is spending $33 *more* per pupil on capital outlay and debt service. In other words, its *total* per pupil expenditures for debt service, capital outlay and current operations would be $133 per pupil.)

But the problem goes beyond just 10% of the districts. Another 15% are fast approaching the danger point. These districts (in the Quality Quarter) are all spending at least $21 on capital outlay and debt service for every $100 on current expenditures. On the other end of the scale, fully one out of 10 districts is spending no more than $3 on capital expenditures for every $100 of current expenditures. One out of four is spending less than $8. It is likely that these districts are not providing their students with as adequate facilities in which to learn as they could if capital expenditures represented more of a burden to them.

How does location affect debt service payments? (*To find the region in which your schools are located, see map, opposite page.*) It would appear from the CEI that in Regions 3, 6 and 8 (*see tabulations, this page*) a great number of schools are reaching, or have passed, the point where they can add to debt service obligations without materially reducing their current operating program. Their housing obligations are becoming too burdensome. This is especially true in Region 8, where one out of every 10 schools is spending at least $42 on debt service and capital outlay for every $100 spent on current operations.

If we are to agree that this burden is too heavy, what about the situation in Regions 1

IN WHAT REGION IS YOUR DISTRICT LOCATED?

REGION 1: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.

REGION 2: New York, New Jersey, Pennsylvania.

REGION 3: Ohio, Indiana, Illinois, Michigan, Wisconsin.

REGION 4: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.

REGION 5: Delaware, Maryland, Dist. of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida.

REGION 6: Kentucky, Tennessee, Alabama, Mississippi.

REGION 7: Arkansas, Louisiana, Oklahoma, Texas.

REGION 8: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada.

REGION 9: Washington, Oregon, California, Alaska.

and 5, where more than half the districts are spending less than $10 per pupil on debt service and capital outlay for every $100 spent on current operaitons?

It would appear to be that in these regions, *too little* is being spent on the building program. Undoubtedly this is true for many of the districts involved. On the other hand, such factors as population growth and amount of expenditure must be taken into account in each individual district, before any hard and fast conclusions are drawn.

For example, in a district where school population has not really grown, a perfectly good and usable school may be in service and the district may have finished paying for it. This certainly would not indicate that the district was failing to provide adequate housing.

As for the *amount of expenditure*, examine two hypothetical districts. District A is spending $100 per pupil on total current expenditures and a nice safe 20% on capital outlay and debt service. District B is spending $500 per pupil for current operations and *only* 5% for capital outlay and debt service. Is one district providing more money for school buildings than the other?

The answer is yes. But it is District B, earmarking 5% of $500—or a total of $25 per pupil for capital improvements, that is spending more. District A has put aside a larger proportion of its dollars, but 20% of $100 per pupil still leaves it with a total available capital fund of just $20 per pupil.

Size as a factor

How does district size affect debt service and capital outlay expenditures? (To find the size category of your district, use the actual number of pupils enrolled, rather than ADA or expenditure pupil units.)

Interestingly, the burden for school housing is greater, on the average, for large districts, those with 25,000 or more enrolled pupils. The smallest districts (with 300-600 students) are spending only 11% on these items the CEI shows, while the largest schools are spending 17%.

Generally, however, comparisons among other school districts, according to size, show no significant difference. The average district with between 600 and 25,000 students is spending approximately $14 or $15 on school housing for every $100 spent on current operations (*see tabulations, page 50*). It is only when you get into the Top Tenth districts in terms of percentage of income spent on capital outlay and debt service, that differences begin to show up, and even here they are not really significant. What they tend to show is that in all size groups but the smallest, about 10% of the districts are experiencing some difficulty in keeping capital expenses from draining away current operating dollars.

Expenditure levels

In all of the CEI articles up to now, figures have been shown on a national basis, for regions, and by district size. There is, however, another important way to measure your district—by expenditure levels.

School districts were arbitrarily divided into four categories—those that spend less than $200 per pupil on total current expenditures; those that spend between $200 and $299; those that spend between $300 and $399; and those that spend $400 or more per pupil on current operations.

The importance of expenditure level in comparing your district with others is apparent. In competing for staff or in measuring your district in terms of maintenance, operational, clerical or materials expenditures, it is unfair for a poor district to have to compare itself with a wealthy one, even though they are neighbors and both are of the same size.

Contrary to popular belief, schools that spend more for education are *not* devoting a greater part of their educational costs for school

continued on page 90

What is a good school library?

You know it is more than just a place to store books. But what do you know about costs, contents, staffing needs, quarters? Here is a yardstick you can use in planning new libraries or improving old ones.

■ ■ ■ A few years ago, decision making on school libraries was much simpler. It was enough to create a storehouse, stock it with books and—in some fashion—make the books available to students. But the torrent of instructional materials—and the ever-increasing flow of new books and other printed matter produced each year since the close of World War II—has changed all that.

Moreover, these new instructional materials have become *essential learning tools* in a modern school. Teachers, students and administrators *use* them. Your job: To make some provision for collecting, housing and distributing these materials, on demand, in your district.

The American Library Association, earlier this spring, published a handbook designed to help you solve this problem. "Standards for School Library Programs"* is the first such guide to appear on the scene since the ALA's "School Libraries for Today and Tomorrow," introduced in 1945.

A guide you can use

Prepared by the American Association of School Librarians with the cooperation of 20 professional and lay organizations, hundreds of practicing librarians and many consultants and experts in the field, the new handbook gives specific information, tailored to your individual school needs. Recommendations are given for already existing and new libraries in schools of more than 200 and less than 200 pupils. The article that follows is a distillation of these recommended standards. For a more exhaustive, detailed look at the areas covered, we suggest you examine the handbook itself.

A future issue of SCHOOL MANAGEMENT will report on school districts around the nation which are actively applying these standards to their own library programs. In the meantime, you may be interested in learn-

*STANDARDS FOR SCHOOL LIBRARY PROGRAMS. *Published by American Library Association. 132 pages. Paper. $2.50.*

ing about what constitutes a good school library, according to the ALA. Bear in mind, however, that these standards are not expected to be met at once in all schools. (Of course, some schools can meet—and even surpass—them right now.) They are meant to serve as goals—something for your district to shoot at—in planning the improvement of your school libraries and your total educational program.

What about the existing library?

Is there something you can do to bring your own established libraries up to a 1960 level of service? If the schools in question have enrollments of more than 200 students, here is what the ALA recommends:

Books. In schools with 200-999 students, book collections range from 6,000-10,000 volumes; in schools with 1,000 or more students, the ratio of books to pupils is a minimum of 10 to one. These figures allow for enough duplicate copies to meet the demands of students and teachers for particular titles. But duplicate purchases are never made at the expense of compiling a well-rounded collection of basic books—the core of the library.

The specific books that any basic collection contains will be gone into later. For the moment it is enough to say that selecting and evaluating books is the task of the professionally trained librarian, working closely with members of the faculty.

Magazines. The number of different magazines kept on file in the library varies with the grade levels within each school: Grades K-six should have 25 titles; grades K-eight, 50 titles; junior highs, 70 titles; and senior highs, 120 titles. In addition, at least five titles in librarianship and instructional materials should be provided for the use of librarians and teachers.

Certain exceptions apply in specialized schools. Thus schools with vocational or technical programs require greater numbers of magazine titles in order to include periodicals in their special fields. But the numbers of titles recommended above are minimums, no matter what a particular school's pupil enrollment may be. (The enrollment will have an effect on the number of duplicate titles available, however.)

Back issues of magazines used for reference purposes are kept for at least five years, though this can be done on microfilm where feasible.

Newspapers and pamphlets. The average number of newspapers available ranges from three to six, though any upper limit is really determined by the needs of teachers and students in each individual school. Pamphlet collections, too, vary with need, though the librarian should see to it that they are fairly extensive and kept up to date in those subject areas about which interest is high.

Audio-visual materials. Quantitative standards are difficult to establish here since many schools borrow or rent films, tapes, records and slides as they need them. But some rules of thumb are applicable: If a film is rented as often as six times a year, it should be purchased for the school collection. If filmstrips and recordings are to be used more than once a year, they should be bought outright, too. For these materials, as well as pictures and slides, the collection should be large enough to meet demands for library and class-

text continues on page 56

	Type of collection	Delegated administrative responsibility	Location in the school
PRINTED MATERIALS	The collections in the school library	Head School Librarian	**1** School library area or areas, with seating space for at least 45-55 in schools with 200-550 students or fewer and for 10% of the student enrollment in schools having 551 or more students. **2** Classroom collections on short- or long-term loans from the school library .
	The collection of professional materials for the school faculty	Head School Librarian	A separate room, either as part of the school library or in another part of the school.
	The collection of supplementary materials (Sets of supplementary texts; classroom reference materials)	Head School Librarian	**1** May be housed in a separate area, in the textbook room, or in storage-stack space of the school library. **2** Classroom collections on short- or long-term loans.
AUDIO-VISUAL		Head School Librarian or Co-ordinator of Audio-visual Materials, depending on local school policy and organization	**1** The audio-visual center (may be part of the school library or a separate center near the library). **2** Classroom collections on short- or long-term loans.

FOR SCHOOL LIBRARY PROGRAMS*

** This bird's-eye view of the ALA's newly published standards applies only to schools with 200 or more pupils. Not included in it are the collections of free or rental textbooks that form part of the supplementary materials of every good school library.*

Annual expenditures	Size of the collections	Personnel
1 Funds for regular library books: In schools having 200-249 students . . . at least $1,000-$1,500. In schools having 250 or more students . . . at least $4-$6 per student. **2** Additional funds as required for: Encyclopedias, unabridged dictionaries, magazines, newspapers, pamphlets. Rebinding. Supplies and equipment.	**1 Books:** Minimum size of the collections in schools having 200-999 students. . . . 6,000-10,000 books. 1,000 or more students . . . 10 books per student. **2 Magazines:** **a** At least the following number of titles in the general magazine collection in schools with Grades K-6, 25; schools having Grades K-8, 50; Junior high schools, 70; Senior high schools, 120. **b** Plus at least five titles in the areas of librarianship and instructional materials. **3** At least 3-6 newspapers. **4** An extensive collection of pamphlets covering a wide range of subjects.	**1 Librarians:** For the first 900 students or fraction thereof: One librarian for each 300 students or major fraction thereof. For each additional 400 students or major fraction thereof: One librarian. **2 Clerks:** One clerk for each 600 students or major fraction thereof. **Note:** The school having 200 students has a full-time librarian and a half-time clerk.
1 For materials, a minimum of $200-$800, depending on the needs and size of the faculty and the availability of other collections of professional materials in the community. **2** Funds for supplies and equipment.	**1 Books:** At least 200-1,000 titles, the number depending on the needs and size of the faculty and the availability of other collections of professional materials in the community. **2** At least 25-50 professional magazine titles. **3** Other instructional materials as needed.	
1 Funds allocated as needed. These funds are in addition to those recommended above for the school library and for the faculty collection. **2** Funds for supplies and equipment.	**1** The size of the collection depends on the needs and enrollment of the school. (Extensive use of school library materials and individualized reading and instructional programs tend to reduce the size of these collections considerably.) **2** The type and number of reference materials purchased for classroom use depend on local school policy.	Library clerks as needed in addition to those provided for the school library and audio-visual collections.
1 Not less than one percent of the total per pupil instructional cost ($2-$6) for the acquisition of audio-visual materials. **2** Funds for supplies and equipment.	**1** A sufficient number of all types of audio-visual materials for use in the classrooms, in the school library, and for home use. **2** Films used six or more times a year are purchased. **3** Filmstrips and recordings used more than once a year are purchased.	**1** When the head school librarian has partial administrative responsibility for audio-visual materials, the number of librarians and the number of clerks are each increased by 25%. **2** When the head school librarian has full administrative responsibility for audio-visual materials, the number of librarians and the number of clerks are each increased by 50%.

article continued on next page

room use and to fill requests for withdrawals for home use as well.

Professional materials. A good basic book collection for faculty—and parent—use ranges from 200 to 1,000 titles. Also included in the collection should be 25 to 50 professional magazines as well as pamphlets, filmstrips, curriculum guides, resource units and other professional resources.

Supplementary materials. These are the books, magazines and other printed materials purchased with library funds but not housed in the main collection. Included are: textbooks, dictionaries, encyclopedias, magazines, newspapers and similar materials designed for classroom use. Most of these materials are uncataloged and unclassified, though author and title records and location notes should be kept.

Other materials. Included in this category are models, samples, student projects, maps, globes, community resource indexes, local field trip guides, college catalogs, vocational guides and similar materials. Many of these items can be borrowed from private sources within the community. Others must be purchased. Here, again, there should be enough such materials on hand for library, classroom, home-loan use.

Housing the collections

The central location of the library in a school building or within a cluster of campus-type school buildings is the key to its effective use in the educational program. The library's space requirements depend upon the school's program, the number of pupils enrolled, the amount and kind of materials to be housed and the design and layout of the library itself. First and foremost, library areas must be large enough to accommodate a school's teachers and students. Some general guides can be followed to insure this *(for more detailed specifications, see box, pages 94 and 95).*

1. The reading room should seat 10% of the enrollment in schools with more than 550 students.

2. In schools with 200-550 students, the minimum seating capacity should be 45-55.

3. The number of reading rooms is dictated by the enrollment and organization of the school. In order to permit adequate supervision, and to provide good service, no reading room should seat more than 100—ideally, no more than 80—students. In larger schools, therefore, multiple reading rooms or special library areas are called for.

Total library quarters must be large enough to house—and make easily available—the materials contained in it. In addition, space for reading, viewing and listening and for equipment storage, work areas and administrative offices is needed.

An important characteristic of the good library is its flexibility. This can be achieved in a number of ways:

- Minimum use of load-bearing walls and elimination of columns.
- Modular planning.
- Interchangeable, mobile equipment and portable furniture.
- Use of adjacent outdoor areas.
- Use of separate levels and areas so that each can become an extension of the other.

Staffing needs

The recommended staff for school libraries is conservative from the point of view of freeing the librarian to devote his time to professional services exclusively. The more the standards are surpassed, the more time the librarian will have to work with students and teachers. Conservatively, then, here are the recommended sizes for library staffs in elementary, junior high and senior high schools:

Librarians. The minimum enrollment for a full-time librarian and a half-time clerk is 200 students. For the first 900 students, or major fraction, one librarian is available for each 300 students *provided* the head librarian is not responsible for audio-visual materials. If he is partly responsible for such materials, the number of librarians is increased by 25%; if he is fully responsible, librarians are increased by 50%.

For each additional 400 students or major fraction above 900, another librarian is required, with the same percentage increases as noted above regarding responsibility for the audio-visual program.

Clerks. There is one clerk for each 600 students or major fraction, if the head librarian does not handle audio-visual materials. Clerks are increased in the same proportion as librarians when the head librarian assumes partial or total responsibility for the audio-visual program.

In K-12 schools with 200 or more students, the above recommendations for schools of similar enrollment are absolute minimums. Ideally, for K-12 schools with 200-399 pupils, two librarians—one for elementary and one for secondary students—would best serve the school's needs.

The library budget

The figures below apply only to those libraries whose collections meet the recommended standards for materials. If a school is striving to develop its library's basic collections, annual appropriations in each category will be larger.

Printed materials. Book funds in schools with 200-249 students range from $1,000 to $1,500; in schools with over 250 students, expenditures for books are from $4 to $6 per pupil. Book costs today average $3 per book for elementary libraries, $3.50 for junior highs and $4 for senior highs. So the bare minimum expenditure of $4 per student means that only about one book per pupil can be bought for the library each year.

In addition, funds are set aside for the purchase of encyclopedias (to be replaced every five years) and unabridged dictionaries, magazines, newspapers, pamphlets and supplies. (Supplies are those items which are used to acquire, catalog, process, circulate, organize, repair, maintain, promote and use printed and audio-visual materials.)

Vocational, technical and other specialized schools may need budgets larger than those given since special books and materials are generally more costly than those found in general collections.

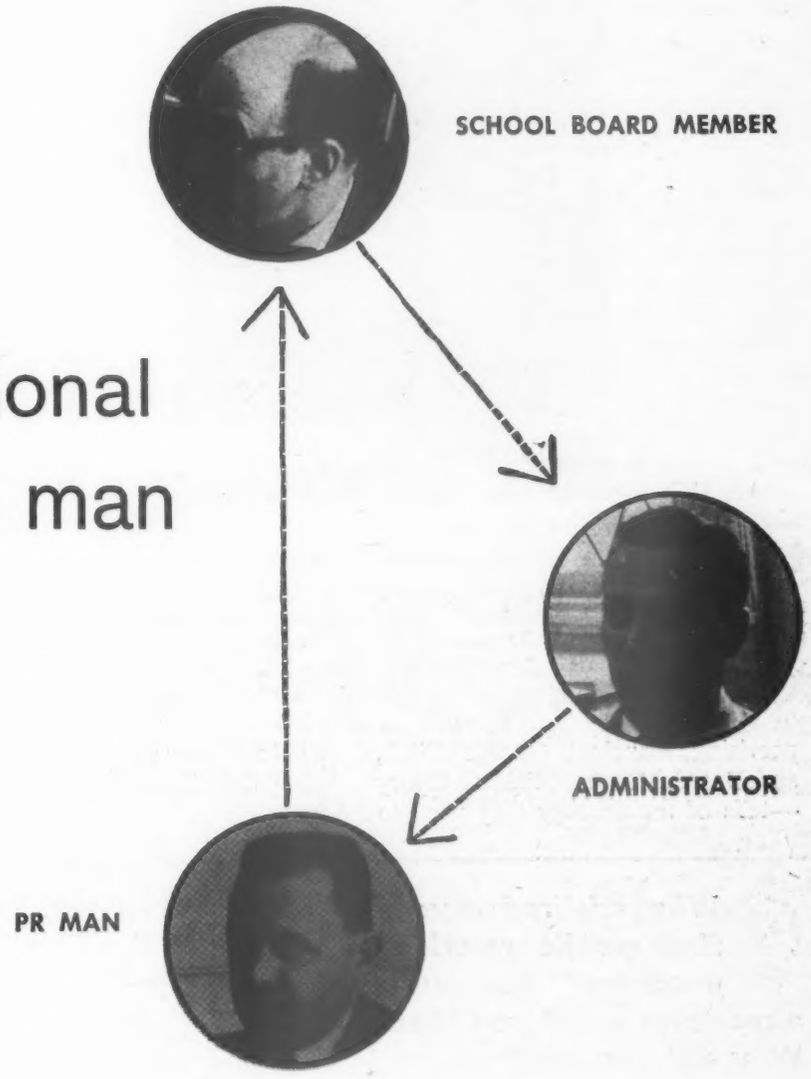
Audio-visual materials. The annual budget, exclusive of equipment purchases, should never go below 1% of the school's total per pupil instructional cost. Depending upon the quality of the teaching program, this figure ranges today from $2 to $6 per student.

Professional collection. The minimum annual expenditure ranges from $200 to $800 per year, the amount being dictated by the size and needs of the faculty as well as

continued on page 94

What does a "pro" do to recover from a bond defeat? This blueprint tells how one district regrouped its forces with an assist from a PR expert.

How a professional public relations man handles a bond vote



■ ■ ■ In January of 1957, the Greenburgh, N. Y., school district had just announced a bond referendum for a new elementary school. The district had about 1,350 pupils, many of them faced with double sessions if new construction was not provided. Its high school pupils were farmed out, on a tuition basis, to White Plains, a larger adjacent community. Unexpectedly, the White Plains school authorities notified Greenburgh that they could no longer accommodate its high school pupils. The district was given until 1960 to make new plans.

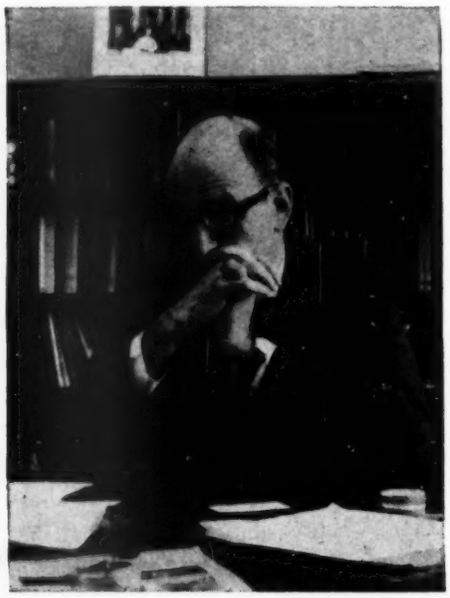
Although White Plains gave Greenburgh adequate time to provide new high school facilities, the announcement caused consternation. Many people felt it was much more urgent to build a new high school immediately and let the elementary situation wait. A factional controversy began. The school board, torn by the necessity for selling two different projects at once—and aware of the absolute need for avoiding double sessions in the elementary schools—plunged ahead with the original plans.

The result was a smashing defeat which left the board, the administration, and the community thoroughly divided and confused. Fortunately, shortly before the disastrous vote the board had asked a group of professional public relations people, who were interested in the local schools, to assist it in a last-ditch effort to sell its program. The effort came too late, but one of the men—William Roach—had become wholly familiar with the overall problem. He was asked by the board right after the defeat if it could use him to direct any future plans it made to sell the need for new schools.

In the following tape-recorded interview, Roach—together with Su-

How a reluctant school board . . . a realistic administrator . . . and a

GYORY



The board acted swiftly, after the first defeat, to insure an effective PR effort.

FITCH

The supervising principal agreed that public meetings be handled by PR experts.

pervising Principal George Fitch, and Board Member Richard Gyory —tells of the strategy they used to produce two new successful bond campaigns immediately after the defeat.

Q *What misfired on your first public relations program? You used experts to assist you then. Why did you fail?*

ROACH: I'll answer that two ways. First of all, there's no doubt but that the bond issue failed because people were confused by the high school-elementary school issue. The board knew it, and called a group of local citizens in to help them with public relations. We had only a month to work and the board and the administration had nothing in the way of factual material to give us to carry to the community. Two of us on that committee told the board that the issue was going to be defeated. There just wasn't enough time to prepare the voters.

Q. How much time did you have?

ROACH: Something like six weeks before the actual vote. That isn't sufficient time to sell real need.

FITCH: That was the biggest problem. The need was there but it was a question of getting all the facts and figures out to the voters before election day.

Q. Did you have an organized opposition, or was it a matter of general discontent in the community?

ROACH: There are always minority groups who want to defeat new school proposals. But these people are only effective when the general climate permits them to be effective. We had two problems—we still have them—and so does almost any other school district. One large chunk of our population has youngsters who go to the parochial schools. Naturally, they were somewhat lukewarm to adding additional dollars for the public schools when their children don't go to them. I am a Catholic myself, but I think anyone can realize that this is to be expected. That was one problem area. We also have another sizeable minority group of low wage earners. They are very concerned about increases in taxes. So we had them to contend with.

Q. Exactly what happened the day after the defeat?

ROACH: The school board called a few of us in to see what we would suggest. Some of the members wanted to go right back to the community for another vote—30 days later—the need was so desperate for space. We advised them not to. We suggested that we all study why we were defeated, learn what the public wanted, make any changes in our proposals that were necessary, and then come back again six months later. They accepted the idea. They asked us to help them. We said we would on one condition: The board and administration would have to do what we said, when we said it, and how we said it. And they had to agree not to do anything we didn't tell them to do.

a professional PR man won a tough bond fight.

ROACH

The experts asked for—and were given —over-all control of the PR program.

Q You really asked the board and administration to abdicate responsibility, at least in this area, didn't you?

ROACH: You might call it that. Actually, they gave up the direction of the program very reluctantly. But remember—they had just gone through the experience of losing one bond issue when they didn't expect it. They knew they had to have definite public relations guidance and help.

Q. What was your first move?

ROACH: We had to define "public relations." I remember that I made a statement that our job was not just to inform the public but literally to *guide* public opinion. One of our board members objected—said it sounded like propaganda or manipulation. So one of the first things we had to do, really, was to educate the board to what we meant by public relations and to what its role and duties would be in that program.

Q. What did you tell the members?

ROACH: We said there were three parts to the program. First, we had to evaluate public attitudes and thinking. Second, we had to design a program for changing present attitudes. Third, we had to execute a program of action.

GYORY: As a board member, I think it was the last point that was most difficult to comprehend. We were made to realize that we couldn't keep coming back to meetings to debate every public release and every step that was taken. So we put the responsibility in the hands of Bill Roach and our administrator, Dr. Fitch. I was liaison with the board. That didn't end all of the problems, but it certainly streamlined procedures.

ROACH: Our next major step was to appoint a 10-man steering committee, a citizens' committee. This group came up with a three-point long-range plan: First, to build a 21-classroom elementary school which would be open by September, 1959; second, to build a high school; and third, to convert the existing junior high school for use by upper elementary grades. Once this plan was adopted by the board, we formed three separate citizens' committees to begin work on the high school proposal.

Q. How big were these groups?

ROACH: There were about 100 people on the three committees, including consultants from Columbia University. One of these groups was charged with making a complete study of the existing plant and future plant needs. The second committee was to make a detailed study of the curriculum needs. The third committee was to study the possibilities for community use of the 160 acres that had been given to us as a high school site. These three committees did a tremendous job. They were both fact-finding and recommending groups and their work formed the basis for the bond issue campaign which went so successfully. In a little less than a year, their first reports were in and we were able to start preparing the district for the high school bond issue.

Q. What were you doing in the "strategy department" while this study was going on?

ROACH: There was no question that buildings would be built. The controversy was: "How much building." We decided to present the elementary school bond issue again as the steering committee had recommended, while also educating the public to the fact that we were going to ask it for a high school, too, immediately after.

Q. How did you get around the problem of cost—the obvious rise in the tax rate that would follow?

ROACH: We stayed away from cost as far as possible. As I said before, we decided to hammer away on *need*. For example, there was considerable difference of opinion as to how big the new elementary school had to be. We tried to nail that down.

FITCH: Here is a classic example. Let's say you have 20 classrooms available. One group of people can say that you can put 700 kids into that many classrooms. Another group will say 500. It all depends

"The first objective of our three-point, long-range program was achieved with the passage of our elementary bond issue."

ROACH

on the size of classes and how thoroughly you can saturate your building. It gets down to a matter of policy on the part of the board of education, which the people ostensibly support. It's a part of the philosophy of the school district, of the type of program you are attempting to provide.

ROACH: Our strategy was to establish some firm answers to these questions and then make certain that everyone concerned knew the answers. We wanted a unified front. Dr. Fitch, as our administrator, provided the technical data we needed. Meanwhile, we assumed we were going to have the same opposition we had had before, so we laid out a campaign to answer the questions that were posed when we were defeated. We also looked for other embarrassing questions that could be asked, and found the answers.

Q. And you stayed away from the financial questions?

GYORY: The opposition had been saying that our taxes would skyrocket. During our unsuccessful campaign, we made some fairly exhaustive studies and gave them figures as to what we thought the tax rate would be. We feel there were disadvantages in this procedure, but we had had no other alternative then. It helped to defeat us. The next time around, we did not predict the overall future tax rate. But we did tell them how much the new school would cost and compared that to what we would have to pay anyway, whether a new school went up or not. That's an entirely different story.

Q Once you had decided on your strategy and you had done your information gathering, how did you carry your story to the public?

ROACH: We formed a speakers' committee—a speakers' bureau, if you will. For the most part, the speakers were citizens who had worked on the various fact-finding committees. We didn't use the school board for this job. We felt we had to avoid the problems of board personalities who vary in ability to present detailed material. We practically wrote a script for the speakers to make sure all the facts were presented. Then they went out into the community and appeared before dozens of little groups to tell the story. In this way they could report back to us and reflect the feelings of the community.

Q. Didn't you hold large meetings?

ROACH: Remember, we had three bond issues. First, the defeat; then the elementary school issue; then the high school issue. We reached the point where we just couldn't get people to come to meetings any more. So we decided on these small group meetings in private homes. We found that people were more inclined to ask questions, to participate, in these small groups.

GYORY: In addition to the speakers' bureau, the PTA had been supporting us throughout. It completely organized the district—every street, every block, every house, in an educational and get-out-the-vote campaign. So here you had a whole series of groups—the big citizens' committees, the speakers' bureau, the PTA—working together toward one objective. Liaison between the groups was handled by Bill Roach and his public relations group. By the time our campaigns were over, I think every citizen in this community was aware that a referendum was being held. It showed up on election day.

Q. Did you use mailings?

ROACH: Dozens of them. We spaced them out to cover the four phases of our campaign. The first phase was a matter of "conditioning" the audience. Both the mailings and the speakers hit on the general background of need for space. We were really getting the people ready to accept what was coming. In the second phase, we went after "educa-

continued on page 86

A fresh approach to the longer school day

Through the use of a rotating schedule, Claremont, Calif., has devised and tested an effective seven-period school day.

By ELWIN F. CLEMMER

Principal, Claremont Junior High School, Claremont, Calif.

Editor's note: the material in this article first appeared in the *Bulletin* of the National Association of Secondary School Principals. It has been rewritten by the author for *School Management*.

■ ■ ■ The biggest problem in instituting a longer school day is fatigue. By the end of a seven-period day, most students are hardly receptive to teaching and few instructors are prepared to undertake the extra effort needed to get new material across at this time.

Three years ago, when our junior high school was separated from what was then the Claremont, Calif., junior-senior high school, we decided to try lengthening the school day for the seventh, eighth and ninth grades.

Previously we had operated six 50-minute periods each day. We embarked then on a schedule that called for seven periods each day. Each period was to be the standard 50 minutes in length. There was also a 10-minute homeroom session each morning.

During the first year of this schedule, pupils, teachers and parents expressed some concern about the duration of the school day and its effect upon pupil attitudes and achievement. Teachers in particular were worried about the effect of this program upon the younger students. A careful check of grades earned during that first year supported this assumption. Teachers tended to assign generally lower marks in achievement, work habits, and cooperation during afternoon classes than in the forenoon ones. Seventh grade students were particularly affected.

A faculty committee at the junior high school was asked to consider this problem, and after deliberations of several weeks, presented the following alternatives:

1. The existing schedule could be retained with a consequent shortening of each class by five or 10 minutes. One objection to this suggestion was that 45-minute periods would be too short for activity classes such as art, home economics, industrial arts, and physical education.

2. A return to the former six-period day could be effected through the elimination of a portion of the elective program. This appeared undesirable since the current elective program offered a flexibility and many advantages not attainable under other systems.

A fresh approach

The issue, therefore, seemed to resolve itself into seeking a shorter school day which would retain the advantages of the functioning school program. The rotating schedule (*see box, pages 62-63*) appeared to possess these qualities and was approved for a one-year trial by the superintendent and the board of trustees.

The original schedule is shown for a school month. There are seven classes rotating on a six-period schedule. The illustration traces

SAMPLE PROGRAM FOR ONE DAY

For A Typical Pupil

	Subject	Letter	Minutes
	Homeroom		20
1	English	A	65
2	Social Studies	B	50
3	Mathematics	C	50
4	Art/ Music	D	50
5	Shop	E	50
6	Elective—Drama	F	50
7	Physical Education	G	50

Original rotating schedule included special 65-minute period. Chart above shows schedule for single day. Below is sequence of two classes over a four-week period.

MONTHLY SEQUENCE OF TWO CLASSES

FIRST WEEK

	M	T	W	T	F
HMR	G				
1	A	G			
2		A	G		
3			A	G	
4				A	G
5					A
6					

THIRD WEEK

	M	T	W	T	F
HMR					G
1					A
2					
3	G				
4	A	G			
5		A	G		
6			A	G	

SECOND WEEK

	M	T	W	T	F
HMR			G		
1			A	G	
2				A	G
3					A
4					
5	G				
6	A	G			

FOURTH WEEK

	M	T	W	T	F
HMR					
1	G				
2	A	G			
3		A	G		
4			A	G	
5				A	G
6					Assem.

"A," an academic class, and "G," a physical education class, through one monthly cycle. When "G," the physical education class, does not appear on the regular schedule, those pupils enrolled reported to physical education class instead of homeroom. During a school month the academic class met 17 times while the physical education class met 20 times, or daily. Homeroom was 20 minutes long, five periods were 50 minutes long, and one period was 65 minutes in duration.

The 65-minute period provided the opportunity for a special activity period every seventh day for each class. Heavier work loads were planned for morning sessions since this was felt to be the optimum period of achievement.

To reap the full benefit of the 65-minute period, careful planning on the part of the teacher and sincere application on the part of the pupil were necessary. When properly administered, this period-and-a-half was intended to more than compensate for the occasional loss of one class session.

The homeroom period, with careful planning, became a meaningful guidance situation.

Constant evaluation was conducted throughout the school term in order to determine objectively the course to be followed in succeeding years.

Questionnaires were distributed to pupils, parents and teachers toward the close of the first year the school operated under this schedule, with all being asked to comment on their impressions of the program, as compared with the purported advantages of the schedule. The emphasis of all questionnaires was an effort to detect the effects, if any, on the achievement level of the students. The conclusions drawn from all responses may generally be summarized as follows:

1. Teachers of academic subjects felt that the occasional loss of instructional time served to the detriment of their particular programs.

2. Physical education teachers were unanimous in their opinion that the 20-minute period every seventh day, which they used for lectures, did not produce the benefits expected.

3. Parents, pupils and teachers alike endorsed the 65-minute period in the morning as being gen-

erally beneficial, but felt that a return to the regular schedule wherein all classes met every day would be even more advantageous.

4. The one item on which there was near-unanimous approval was the matter of the rotation of classes, which enabled teachers and pupils to work together at their optimum level frequently, and minimized the negative aspects of the routine which requires each class to meet at the same time every day.

A revision is made

After surveying all questionnaires, the faculty committee recommended to the board of trustees the return to the regular schedule of seven periods of 45 minutes each day, with classes to rotate daily. Under this plan, pupils would attend on Tuesday first period the class that they had attended last period on Monday. (*see schedule, this page*). A 15-minute homeroom period, which permitted ample opportunity for students to check daily routines, was scheduled each day. The schedule for the day was posted in all rooms.

The proposed schedule went into effect the first week of the current school year. To date teachers, students and parents have concurred in thinking that this system of daily class rotation is of real benefit to the instructional program. No longer do teachers or pupils complain about "that last period algebra class," which invariably and eternally falls during late afternoon.

From the pupils' point of view this type of schedule offers something seldom known under traditional methods—freedom from the feeling that "the schedule" plays a part in one's tendency to succeed or fail in a given subject. The opportunity to attend each class under the best circumstances was cited as the most important advantage over and over again in pupil (as well as parent and teacher) questionnaires. The one disadvantage we must acknowledge is that classes are only 45 minutes long. But since each "activity" class does occasionally fall in the open-end last period, this time can be used, when desired, for projects that take extra time.

While the system may appear to be complicated at first glance, it really presents fewer problems than one might think. After prolonged vacation periods, such as Christmas recess, the first period after returning would be subject "A" rather than repetition of the class attended during the last period two weeks earlier. In most other cases, where breaks in the schedule are of a relatively brief duration, students can be expected to remember the last class of the day previously attended, or they may, of course, check posted bulletins.

No longer must the administrator attempt to pattern his master program on the "academic in the morning—activities in the afternoon" basis. Physical education teachers and counselors have less concern over "that physical education class so early in the morning." Since assemblies are traditionally conducted during the last period, no longer does one particular class bear the brunt of such schedule variations. Every teacher has an opportunity to work with every child at a time when he and the child are presumably most efficient. The teacher's tendency to mark pupil's work more severely (or the child's tendency to achieve less satisfactorily) during a certain period of the day has disappeared.

Teachers new to the Claremont Unified School District have indicated their appreciation of this system as compared with others under which they have worked. They often plan testing situations for periods during which classes appear early in the morning, so as to capitalize on the alertness of refreshed students.

Faculty members are assigned lunch area supervision according to their preparation periods, so that whenever a teacher's preparation period occurs during either first or second lunch shift, his duty assignment then goes into effect. In this manner, teachers have lunch duty only once in every seven days, but on a regular and predictable basis. It will be noted that the published schedule also includes a forecast of the period sequence for the following week, so that students and teachers may look ahead as they plan special activities.

At this writing one may be assured that the rotating schedule will be utilized in the future at Claremont Junior High School, and that the benefits to be derived will be accented by continued improvement in pupil performance. **End**

CLAREMONT'S NEW ROTATING SCHEDULE

Schedule for week beginning Monday

FROM	TO	PER	M	T	W	T	F
8:05	8:20	HR	HR	HR	HR	HR	HR
8:25	9:10	1	A	G	F	E	D
9:25	10:10	2	B	A	G	F	E
10:15	11:00	3	C	B	A	G	F
11:05 (11:00)	11:50 11:35)	4 or (Lunch)	D	C	B	A	G
11:50 (11:40)	12:25 (12:25)	Lunch or (4)					
12:30	1:15	5	E	D	C	B	A
1:20	2:05	6	F	E	D	C	B
2:10	2:55	7	G	F	E	D	C

Schedule for week beginning Monday

PER HR	M	T	W	T	F
1	C	B	A	G	F
2	D	C	B	A	G
3	E	D	C	B	A
4	F	E	D	C	B
5	G	F	E	D	C
6	A	G	F	E	D
7	B	A	G	F	

A radical experiment in teaching elementary algebra

Early this year, school officials in Roanoke, Va., brought teaching machines into their curriculum. In this article they tell why they did it, how they introduced this experimental method and how they are testing it.

■ ■ ■ On February 1, 1960, the Roanoke, Va., public schools began an experiment in teaching elementary algebra through the use of teaching machines. For a whole semester, 35 pupils—each working with his individual machine and with a teacher watching but giving absolutely no help—are attempting to teach themselves what is generally believed to be a difficult subject.

Although the program is well under way, it is still too soon to report results. The students were tested before the experiment began and will be tested again this month. They will receive the same examination taken by ninth graders who have completed a *whole year course* in elementary algebra using conventional methods. Then, and only then, will the Roanoke people know whether their highly optimistic expectations have been realized.

But here's what should be of particular significance to other schoolmen, at this moment:

- How the Roanoke administration presented this plan to its school board, staff and public.
- Some details on this revolutionary method itself—for if the program is successful, it may well have major impact on educational techniques in teaching mathematics and other "exact answer" subjects.

SCHOOL MANAGEMENT's editors interviewed two men associated with the program: Superintendent E. W. Rushton and A. B. Camper, director of instruction.

In the following tape-recorded interview, they describe the nature of the program and its objectives.

"We trust the community and the community trusts its schools."

RUSHTON

Q. Dr. Rushton, are you really planning to teach a whole year of elementary algebra in a single semester using only a new and relatively untested machine? Won't there by any "live teaching" involved?

RUSHTON: You have several questions there, so let me answer you this way: This course is going to be taught solely by machine. The teacher will watch but give absolutely no help. Under practical conditions, however, I know she may have to give a little help if she finds a student is too far off the beaten track. But that will indicate a failure in the machine technique and she will make a note of it for correction the next semester.

Q. Have you selected unusually bright candidates for this first semester program?

RUSHTON: No. In fact, we've taken particular care to select a perfectly rounded collection of pre-algebra eighth graders. Each child was given two tests: The Seattle algebra test to make sure that he had not been exposed to algebra in any way; and an Otis Intelligence test. We also have our own data from the California Test of Mental Maturity and various other tests of that sort.

Q. Do you have a control group working opposite these youngsters?

RUSHTON: This is not a controlled experiment. Our main objective this year is to prove to ourselves whether or not algebra can be

taught by a teaching machine. The research we've examined indicates that it's possible —in fact, probable. Our only control has been to test the children to make sure they have had no prior experience with algebra.

Q. Then you will try to compare with the so-called conventional teaching method?

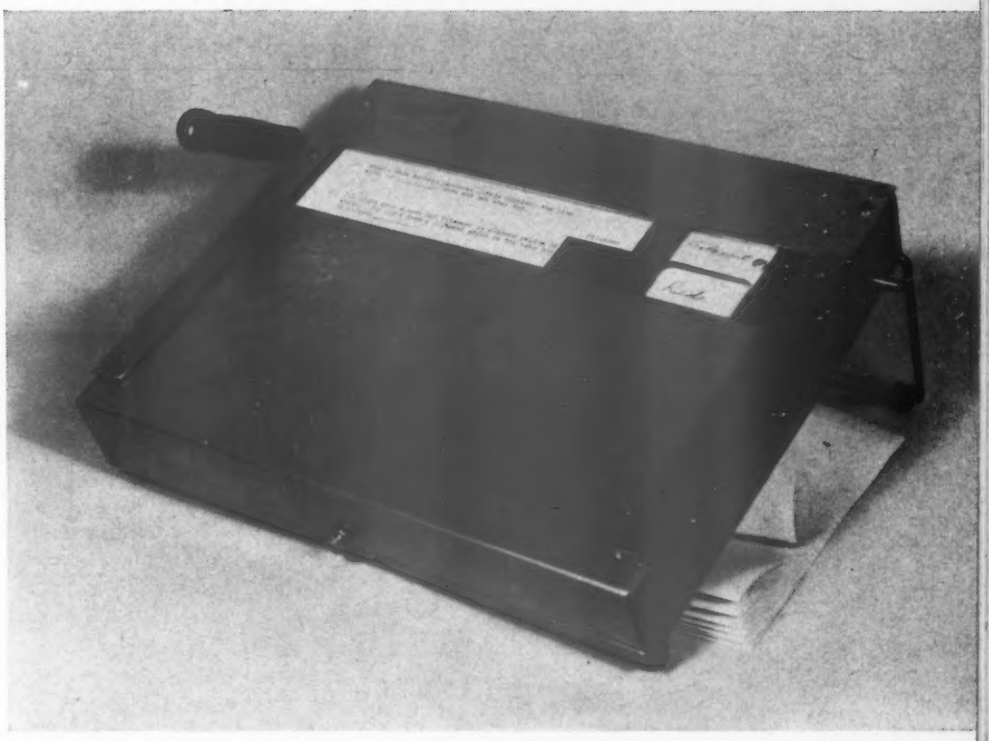
RUSHTON: Possibly, but the best way to look at this is as an effort to "get off the ground." Now, if we can prove to our satisfaction that this thing works reasonably well, next fall we expect to take a larger bite. We'll probably use three ninth-grade groups. One will do the algebra program on a machine with no help. Another will do the program with a teacher and no machine. The third will use a combination of the machine and the teacher. It is our feeling now that we may possibly have the same teacher handle the three groups, to get a stabilized situation.

Q. Exactly how does a machine work in teaching algebra?

CAMPER: Let me give you an example. Suppose you know absolutely nothing about algebra. I'm an algebra teacher. The first thing I'll do is give you what might be called an oral background. I'll explain something. Then I'll ask you if you understand. If you give me the right answer, I'll go on to the next explanation, the next step. That's the way algebra is taught ordinarily —in small increments, tiny steps at a time, so that the pupil doesn't go astray. Each of these steps is tested with questions. Well, a teaching machine does precisely the same thing. It uses very carefully planned and reworked and reworded sequences that are written instead of spoken. After each sequence, it asks a question. You write in your answer. Moreover, you learn *immediately* whether your answer was right or wrong, (*see box, page 68, for further details*).

Q. What if a child makes a mistake and doesn't know why?

CAMPER: If a child misses a sequence, this machine is designed to re-teach it. No link is taught once—everything is re-taught as we move along. We re-teach, back up, and re-teach.



Each of the students in the Roanoke experiment works with one of these machines.

Eventually, an electronic machine —this machine is a manual one— will be able to tell a child to go back for a new start. He'll go back and repeat and then get back into the stream again. The machine will diagnose the missing link and tell him where to go.

Q. Won't different children work at different speeds? Won't some finish the course faster than others?

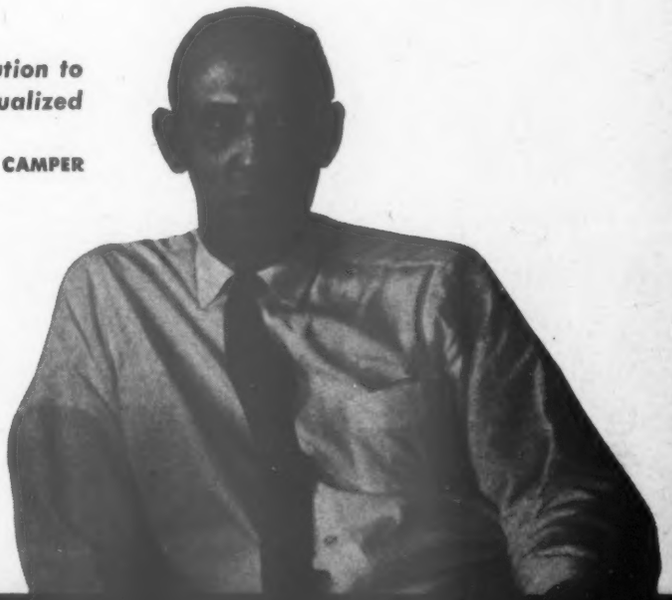
RUSHTON: That's right—and that's one of the advantages of this method of teaching.

In a conventional classroom situation, the teacher has to proceed at the pace of the group rather than the pace of the individual. She explains and re-explains things that many children already understand. That's why I believe that the "teacher plus the machine" method is the answer to this teaching prob-

continued on page 68

"This may be one solution to the problem of individualized instruction."

CAMPER



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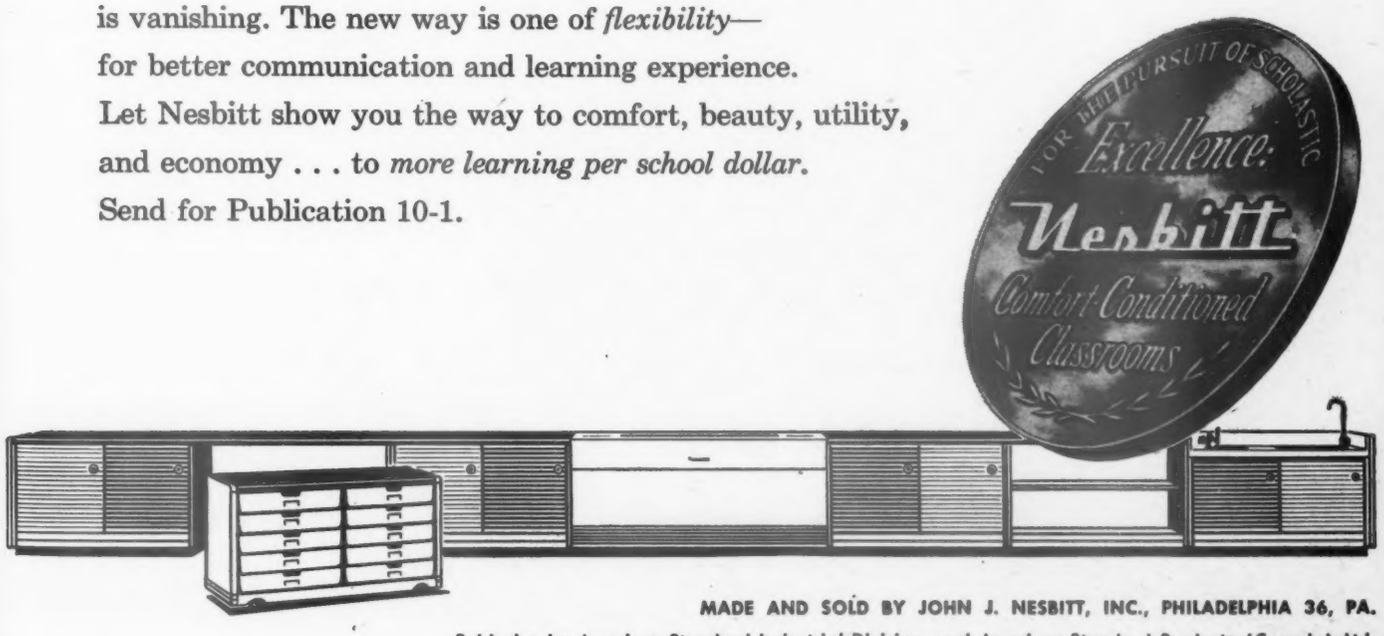

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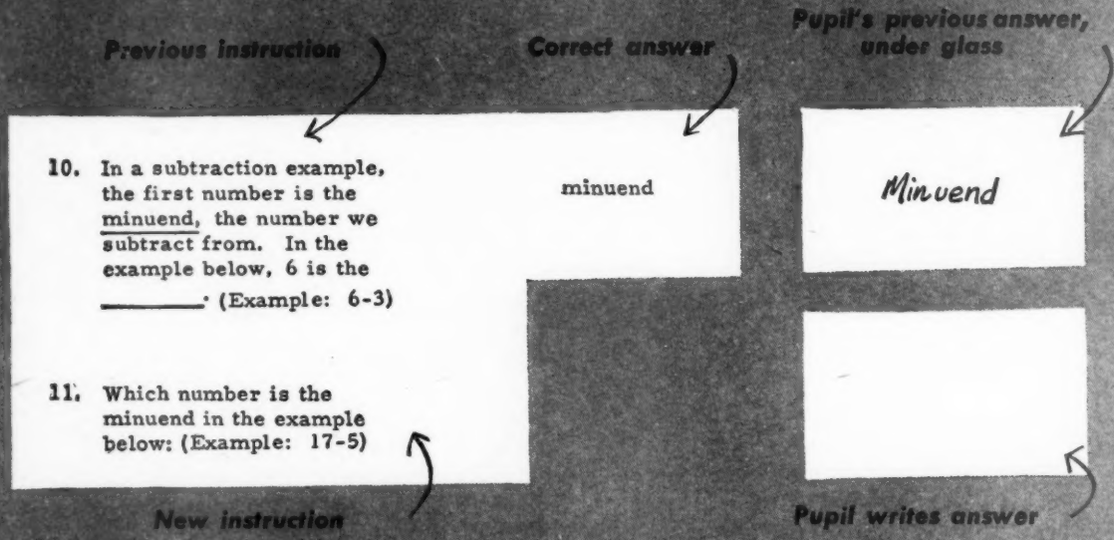
HOW ROANOKE'S TEACHING MACHINE WORKS

Thirty-five small, lightweight Foringer machines are being used in the Roanoke experiment. Manually operated, they cost only $70 each.

The "lessons" are printed on a paper tape which is advanced by depressing the lever on the left hand side of the machine. The pupil reads what he sees in the window at the left *(see illustration)*, then writes an answer to a question in the window at the right. He then moves the tape forward by depressing the lever. This reveals a new instruction and question, but the previous question and answer are still visible, and may be checked against the correct answer which also appears at the right.


Previous instruction
Correct answer
Pupil's previous answer, under glass
10. In a subtraction example, the first number is the minuend, the number we subtract from. In the example below, 6 is the _____. (Example: 6-3)
minuend
Minuend
11. Which number is the minuend in the example below: (Example: 17-5)
New instruction
Pupil writes answer

This so-called "programmed method of learning" has important educational advantages. These were recently summarized by Donald E. P. Smith, of the University of Michigan, in the *Michigan Education Journal* in which he said:

"Many values of programmed learning have been claimed. The following appear to be the most important and the most defensible:

"1. Every student is continuously involved with the task, a condition seldom obtained in the classroom.

"2. Learning is completely self-paced; the learner can proceed as slowly or as rapidly as his ability requires.

"3. Motivation to learn becomes very great as a result of the continued success built into the program.

"4. The teacher is relieved of the responsibility for insuring routine learning, thus leaving time for the development of creative and critical thinking skills."

lem. When you come right down to it, it gives every student an individual tutor.

CAMPER: I'd like to add another point. This thing will relieve a teacher of many of the drudgeries—the routine repetitions—of teaching. It will free her to use her time at a level at which a human brain ought to be operating working with children.

Q. Isn't there a potential problem in the different reading abilities of children? Some children can read and comprehend better than others. Won't the poor readers be at a disadvantage?

CAMPER: We are dealing with eighth graders. The material has been written to remove any words that are beyond the fifth grade level, except for the algebraic terms which have to be explained as we go along. I'd like to re-emphasize my personal belief that the program is going to be most effective when the teacher takes a small group of seven or eight out of the machines class, maybe once a week, and works with them around a table. She will attempt to solidify and crystallize some of their knowledge. She'll find out that they're not astray. Let's assume this group is the slower learning group. The rest of the students still go on with the program. This gives the teacher her opportunity to work with a handful of children without delaying the progress of the rest of the class.

Q. Isn't this going to be a rather dull learning experience for the students —working with a machine five days a week for a whole semester?

RUSHTON: We don't know. But we do have information based on experiments which have been conducted in the elementary school, on children learning mathematics by machine. Their reaction is that they have enjoyed the machine more than they did the teacher!

CAMPER: You've got to remember that there's nothing more boring for a child than a class in which he is frustrated because the group is moving too fast or too slow for him. We think this may be one solution to the problem. We accept the fact that individual differences must be handled —but we don't have the means to handle them.

Q. Your present thinking has been developed to a point where you can accept that concept. But at the beginning—when you first heard about this teaching machine—didn't you have a different emotional reaction? Didn't it sound like it was dehumanizing teaching?

CAMPER: We were skeptical, but not for the reasons you suggest. We were introduced to this machine at Hollins College. Hollins is a very strong liberal arts college for girls just outside of Roanoke. Our program is a cooperative effort with the Hollins people. In fact, it was made possible through a foundation grant to two professors at the college for experimentation in automated teaching. We were first invited to a demonstration at Hollins and we saw the machines in use. Frankly, they had very little meaning to me at first. I asked what part the teacher was going to play in its use and I was told it would not take the place of the teacher but would provide him with a superior teaching aid. The more we talked, the more impressed we became. It's mighty exciting to think of a machine that helps a student do two years work in one year.

Q. Wasn't this a ticklish subject to introduce to your school board or your staff—let alone the community itself?

RUSHTON: No. My first thought was to present it to the school board to find out how the members felt about it. Actually, a decision like this is in the province of school administration but, since this was a really new idea, I thought the school board would be interested in finding out what we thought about it. I brought a machine to the board meeting and we all used it. They were tremendously enthusiastic.

Q. What about your teaching staff? One might expect them to be suspicious. Did you make a formalized presentation to the faculty?

RUSHTON: We haven't, as yet. They know about it, of course. But only the principal of the school in which the class was going to be held and the teacher of the children were introduced to the machine in the early stages. We didn't find any resistance there. As a matter of fact we approached it as an aid to teaching rather than something to replace teaching. I don't see that there is a problem. Teachers aren't afraid of audio-visual equipment, for example. They know the equipment is not taking the place of teachers. It has made it possible for teachers to do a better job teaching.

Q. Is that a valid comparison? After all, audio-visual equipment is a supplementary teaching approach. A teaching machine will carry the major portion of the teaching process.

RUSHTON: For this particular trial, that's true. We don't know about the future.

Q. What about general community reaction? This must have provided a field day for your local newspapers.

RUSHTON: On the contrary, we had no distortion in the press and no flamboyant headlines. We trust the community and the community trusts its schools.

Q. Dr. Rushton, suppose you didn't enjoy this climate of mutual trust? How would you have felt then about introducing the teaching machine?

RUSHTON: I wouldn't have given it a second thought. I'd have forgotten it. If I had an antagonistic board, or if the newspapers were trying to find out what's wrong with education instead of what's right, I would work first on that problem before I worried about teaching machines. It wouldn't be a matter of dropping an innovation; it would be a matter of handling the important thing first.

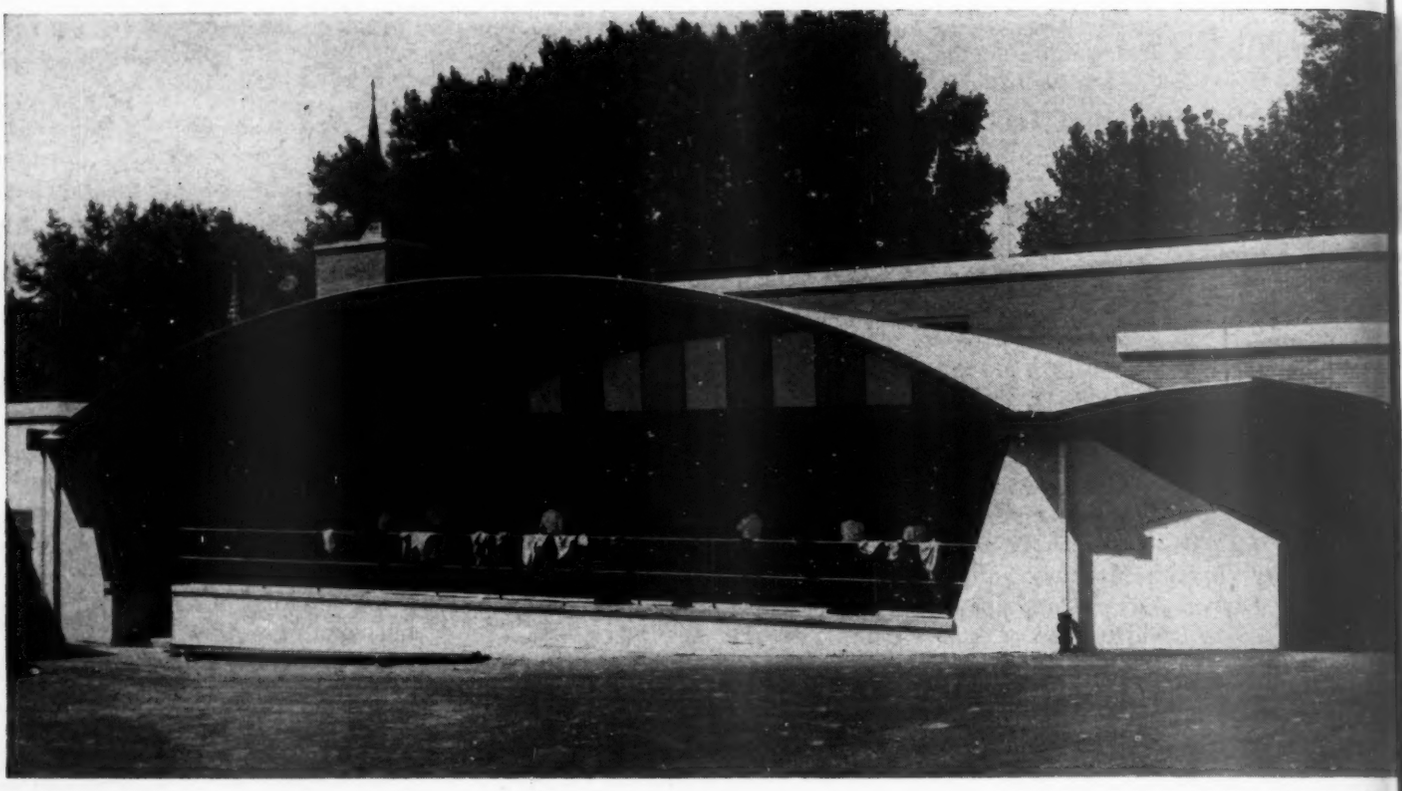
Q. What's the key to building the kind of confidence you enjoy?

RUSHTON: The key is to have people feel that you have a forward-thinking school program. I think that where people *believe* that they have better schools, this belief results in their *having* better schools.

Q. Aren't you apt to run into some trouble later on with the community?

RUSHTON: I'd like to say this: When you start anything—any kind of an experiment, anything that is different —you're going to bear the consequences of your behavior. You must be willing to accept the good with the bad. Whenever we're convinced that something has more good in it than it has bad, then we go ahead and try it. We don't want to revolutionize education. But we feel we would like to have the opportunity of doing some of the innovating ourselves—instead of waiting for others. **End**

No more waiting in the rain



Arched roof over play terrace has provided school with all-weather area for recreation, bus depot and community theatre.

For less than $5,000 the new South Elementary School in Beaver Falls, Pa., got a weatherproof bus depot, play area and outdoor theatre. Here's how.

- A weatherfree, covered bus depot.
- A dry play area for use in all but the coldest weather.
- A professional outdoor stage for school productions.

These are just three of the many uses the South Elementary School of Beaver Falls, Pa., has gotten out of an investment of $4,788.

In designing the school, Architects Dickerson and Frederick of Beaver Falls included an outside play terrace off the gymnasium wing. To gain full benefit of the 68 by 28-foot area, a roof was needed for protection against bad weather.

Rather than employ a conventional flat or shed roof, the architects specified a covering that, without trusses or supporting columns, would arch across the 1,863-square foot area in a graceful span.

This shape was chosen because it would provide maximum height for ball games played in the shed area and, by specifying corrugated steel panels, the architects felt they could counteract any noise problems that might otherwise occur in a covered play area.

The roof was constructed of steel sheets protected with an extra-heavy zinc coating to make them virtually maintenance free. Jones & Laughlin Steel Corp. manufactured the sheets and applied a two-and-a-half ounce coating to the corrugated panels for maximum corrosion resistance.

Installation of the shiny, trussless roof was accomplished by merely bolting the 10-foot panels together and imbedding the end members in

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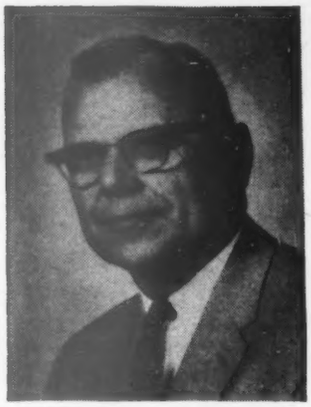
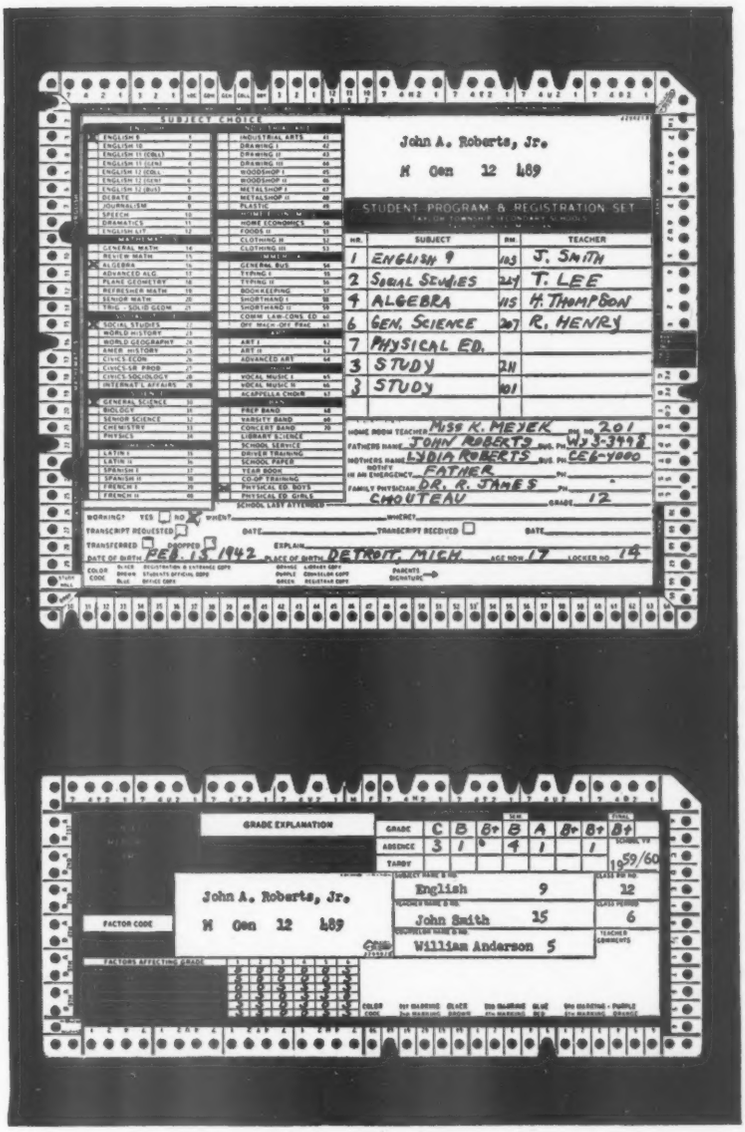


Says Principal Anthony Matulis of Taylor Center High School, Taylor, Michigan


John A. Roberts, Jr.
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STUDENT PROGRAM & REGISTRATION SET
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2 SOCIAL SCIENCES 204 T. LEE
4 ALGEBRA 115 M. THOMPSON
6 GEN. SCIENCE 207 R. HENRY
7 PHYSICAL ED.
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3 STUDY 101
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TRANSCRIPT REQUESTED
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GRADE EXPLANATION
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For a detailed report on Principal Anthony Matulis' use of Keysort, write today to Royal McBee Corporation, Data Processing Division, Port Chester, N. Y.

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the top of concrete buttresses positioned at each side of the terrace. At its apex, the roof is 14 feet above the wall of the terrace.

The only completely exposed side of the play terrace faces south. The gymnasium wall provides a northern protection while another portion of the school building offers a westerly protection.

The outdoor area has been in use almost every day since the school opened last fall. It is regularly scheduled as a depot and play area, and is used as a supplement to the gym program, especially on rainy days.

All season use

Although in the coldest weather it is uncomfortable, school authorities found they could use the building on many winter days and it has proven a real boon in the fall and spring months.

The availability of the area has also made it possible to schedule band and choral practice sessions in the gymnasium.

According to Supervising Principal Francis Mitchell, the covered area has proven a very worthy supplement to the gym program, especially on rainy days. It also is expected to figure very heavily in the district's well-organized summer recreation program.

Extra attraction

There has been one extra, unexpected advantage to the covered area. As Principal Mitchell points out, no matter when school opens there is always a group of students who arrive early and must wait outside for the custodian to open the building. This often means waiting in the snow or rain.

"This is no longer a problem," Mitchell reports. "Now, in good weather and especially bad, our covered platform serves as a safe, comfortable and dry play area for our early birds." **End**

Quickly installed, the prefabricated steel sheets are virtually maintenance free. No trusses or supporting columns were necessary, leaving the area open for play.

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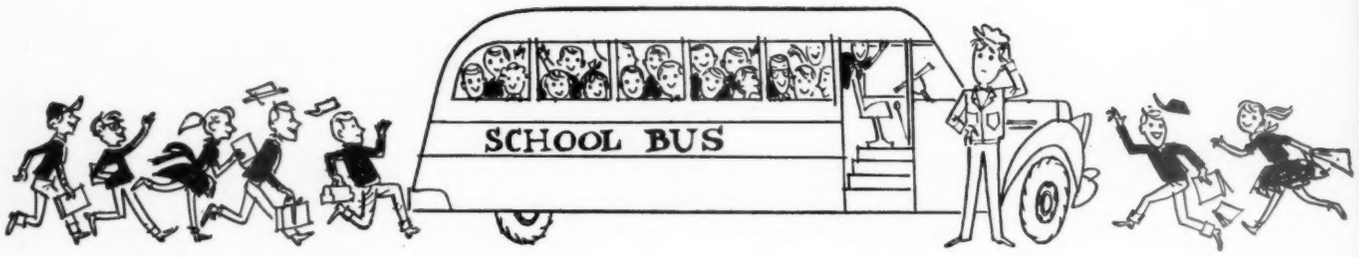
How to end "double run" bus problems

In Holt, Mich., double bus runs caused discipline problems, resulted in unusually long days for some children and cost the schools money. Holt's simple solution to the problem could be adopted anywhere.



By MAURICE PERNERT
Superintendent of Schools, Holt, Mich.

■ ■ ■ Eight years ago, we faced a population boom that not only crowded our schools, but also made it necessary to purchase a fleet of school buses.

The district purchased six buses, financing them on a seven-year basis. A few years later two more buses were bought, one for cash, the other on a seven-year mortgage.

Despite the purchase of these eight new buses, we were still forced to overload on some runs and ask drivers to make two trips on others. Overloading, of course, besides being a safety hazard, meant undue wear and tear on the vehicles. Double runs created another problem: some students were arriving at school well ahead of the start of the school day, and others were unable to leave until well after school had ended.

Since we had students in school both before and after the regular day, it was necessary to hire a paid supervisor for the elementary children. Junior and senior high school students were generally on their own, which created some discipline problems.

By the spring of 1959, it had become obvious that some solution to the transportation problem was imperative. Costs of supervision were mounting. Discipline and overcrowding problems were growing and parents were properly concerned over the long days some students were experiencing.

Three ways out

There were three possible solutions to the problem. First, we could try to ignore it and hope it would go away. This was ruled out on several grounds, including the knowledge that the problem would not go away. Rather, with population still rising, the problem was bound to get worse.

A second possibility was to purchase enough buses to eliminate double runs and overcrowding. This was financially impossible.

Having ruled out these two extremes, the school board adopted a plan which is both educationally and financially sound. Starting last September, different grades were scheduled to start and end at different times. This made it possible for buses to make double runs without forcing students to wait at school. It

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"Work Place for Learning" by Lawrence B. Perkins. A colorful, bountifully illustrated hard-cover book on school architecture. Available to school administrators, architects and other professional people at $2 from L·O·F by special arrangement with publisher. At bookstores, $4. Send check to L·O·F, 7460 Libbey · Owens · Ford Building, Toledo 3, Ohio.

Tuf-flex® glass in Ridgebury School, Lyndhurst, Ohio **Architect: Spahn & Barnes, Cleveland, Ohio**

School design for the age of "missiles"

Wherever basketballs (or children) are flying, windows nearby need *Tuf-flex* glass. *Tuf-flex* tempered plate glass is 3 to 5 times tougher than regular plate glass of the same thickness. And if *Tuf-flex* is broken, it is safer because it breaks into relatively small crystals.

Play safe—use *Tuf-flex* tempered plate glass in all vulnerable areas such as: corridor windows, gymnasiums, entrance doors and windows facing playgrounds. It's so much better than frequent replacement.

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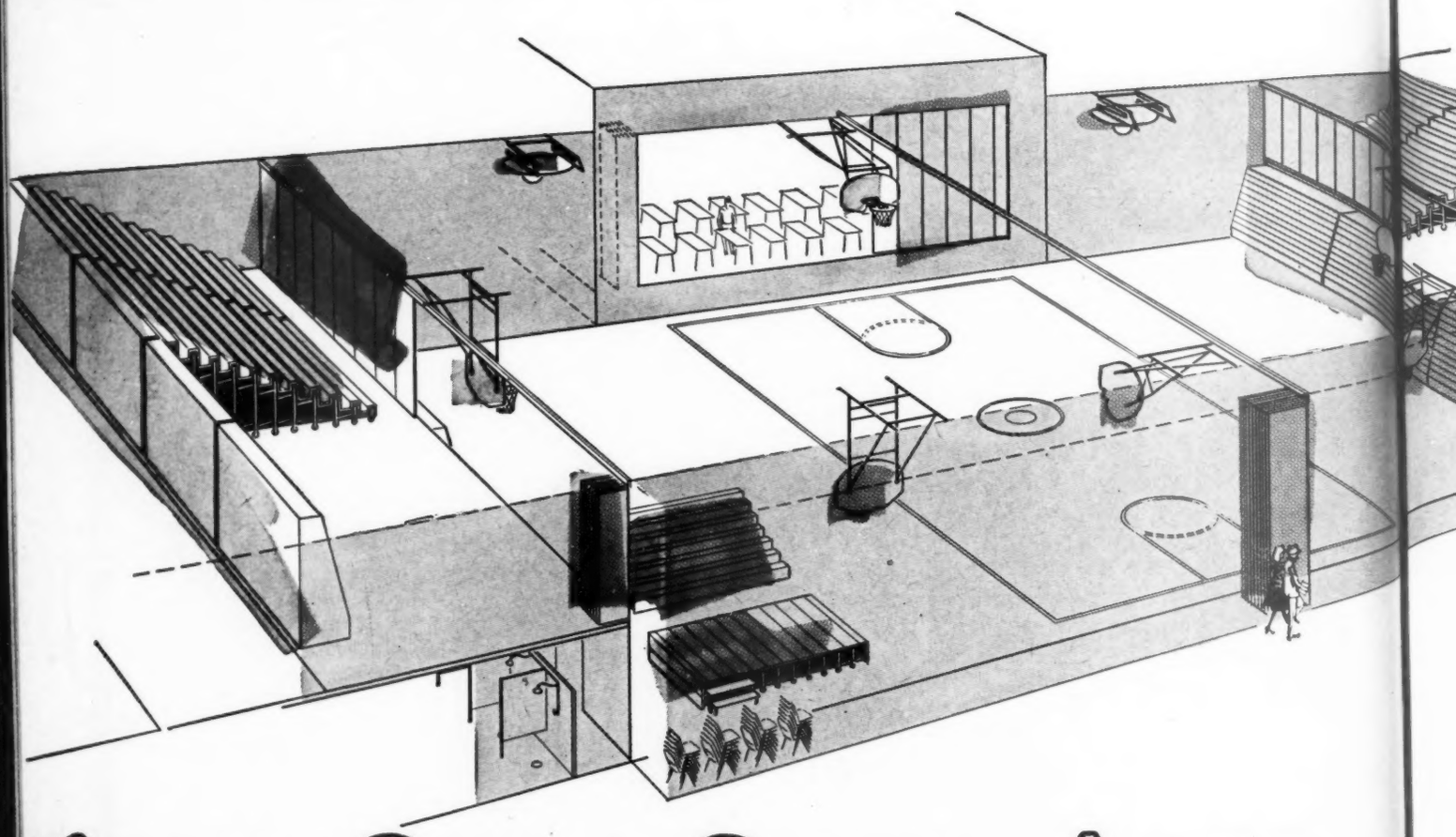

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2 **Coordinated Planning, Design, Installation**

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4 **Lower Total Cost when Planned and Installed as a Package**

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Describes, illustrates
recent Flexi-Gym Ideas, recent
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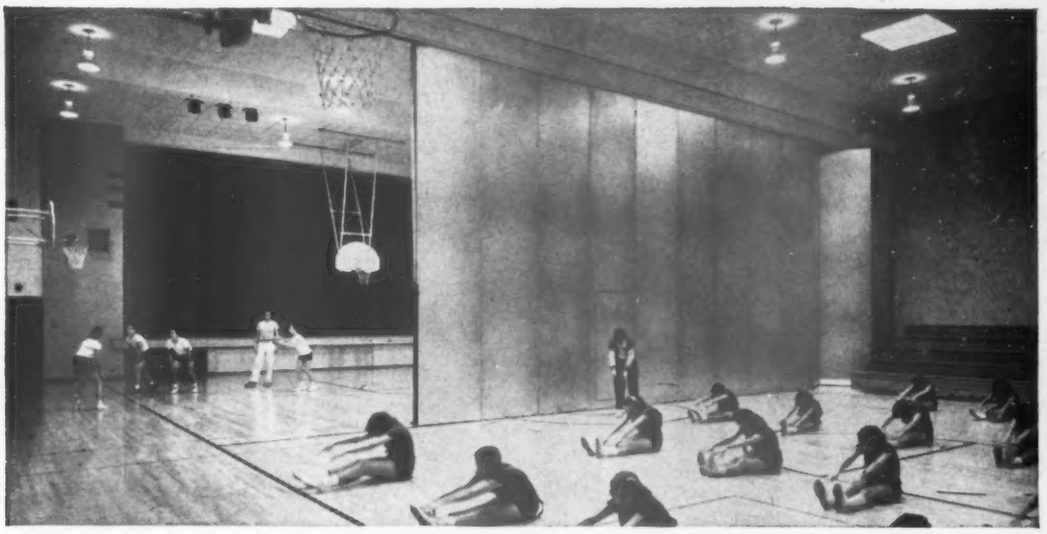
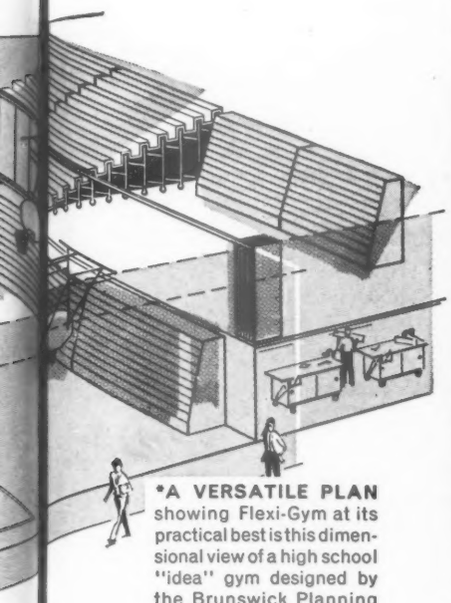
***AT WORK**—Advanced Planning resulted in a truly versatile 4680 square foot gymnasium area, Oakview Junior High School, Skokie, Illinois; Dr. Homer O. Harvey, Superintendent; Orput-Orput and Associates, Architects.*



A FOLDING PARTITION, 20' high by 65' long, gives important flexibility to this gymnasium. With electrically powered partition closed there are two smaller courts each large enough for a gym class. With partition open, the Oakview Junior High School has an auditorium for glee club and band concerts, stage plays, community activities and assemblies; gym area for wrestling demonstrations, badminton, golf, touch football, AAHPER Fitness Tests, or a regulation basketball court.



***A VERSATILE PLAN** showing Flexi-Gym at its practical best is this dimensional view of a high school "idea" gym designed by the Brunswick Planning Service. It includes 14,400 square feet on main floor and balconies; seating for 5200; can be divided into 5 separate areas for physical education, sports, assemblies, dining areas, study areas, other educational and community purposes.

10 SETS OF 5-TIER FOLDING STANDS provide a seating capacity for 500 and are set up in 10 minutes by two men. An equivalent capacity in portable stands would require 4 men working 1 hour. In addition to obvious labor-cost saving, no additional storage space is required. In the first year of experience the folding stands have been effectively used a minimum of once a week for academic, sport and community purposes, according to Dr. Homer O. Harvey, Superintendent..

6 BASKETS AND BACKSTOPS are arranged to give both boys and girls 3 each for refereed games or free-throw practice. Five of the six baskets are retractable and easily handled by even the girls' gym instructor. When weather is inclement the gym is opened to students during lunch hours giving them a place to sit and talk or practice basket shooting. Approximately 142 boys out of 170 enrolled in school, participate on either the school or one of the many intramural basketball teams.

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Non-code stations—automatic detectors. Moderately priced and suitable for smaller schools where the purpose of the fire alarm system is to bring about the evacuation of the building by sounding a continuous alarm.

fire alarm systems

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For the designation, through a coded signal, of specific danger areas within a building.

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For buildings where it is desirable to pinpoint the location of the fire and transmit the signal only to designated personnel, who may quickly investigate the extent of the fire and determine whether a general alarm is necessary.

For Technical
WRITE Dept.

Wheelock SIGNALS INC.
LONG BRANCH, N J.

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"Double runs" *continued from page 74*

HOLT'S NEW SCHEDULE

Kindergarten morning section	8:50 to 11:20 a.m.
Kindergarten afternoon section	12:50 to 3:25 p.m.
Grades one through five	8:55 to 11:30 a.m. *
	12:30 to 3:30 p.m.
Sixth grade	8:15 to 11:15 a.m. *
	12:00 to 2:45 p.m.
Grades seven through 12	8:15 to 11:15 a.m. *
	11:45 to 2:45 p.m.

* *Noon hour dismissals are approximate.*

did *not* cause any student to have just a half-day of schooling.

The staggered schedule we adopted (*see box*) was designed so that elementary students (grades K-5) would ride separately from those in the higher grades. Under this setup, no child ever arrives early or has to wait after school to accommodate bus runs.

The upper grades were scheduled earlier so that they could be dismissed earlier. This means that students who want to participate in extra-curricular activities can still get home at a reasonable hour. It also makes it easier for students to obtain after-school jobs. At the same time, the day for the younger children was not made to end so late that they would arrive home after dark.

Money saved

Financially, this system has many advantages for our schools. Because the noon hour was shortened for grades seven through 12, four teacher hours that had been devoted to supervision are now available for classroom teaching. Moreover, non-supervised activities off the school grounds have been reduced substantially.

The system also made it possible for us to cut down on the number of bus purchases we had to make. We bought one new bus this year. It replaced one of our seven-year-old models, which is now being used as a spare in case of emergencies.

Since we don't have to overcrowd buses, we expect that the ones we have will last longer. This will mean that we can afford to purchase our buses outright for cash, eliminating expensive financing.

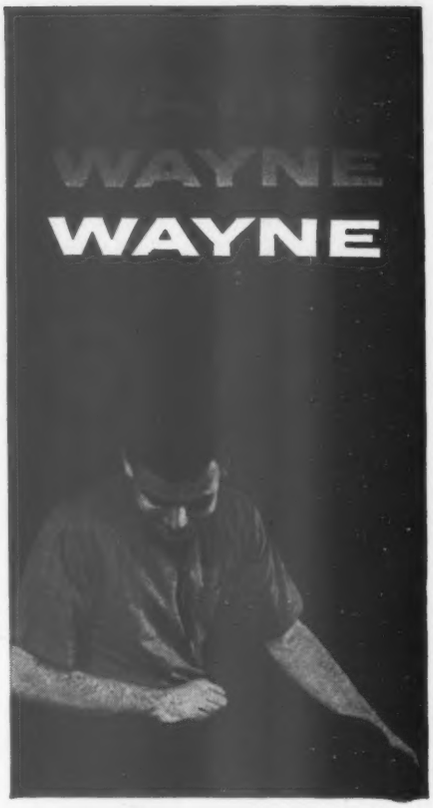
New problems

Of course no plan of this nature solves everything at once. Our staggered scheduling has created some new problems but they are minor compared to those we faced before.

Because the noon hour has been shortened, some students who had walked home for lunch can no longer do so. We have lowered our lunch costs to 30 cents. This was possible since increases of the number of students using school lunch facilities has made operations more efficient and we feel this will not place any undue strain on family budgets.

We know too that in some households, staggered school hours mean staggered breakfasts. But we feel that this inconvenience—which occurs only for that one meal—is one that most families are willing to accept since the actual time difference is really quite short.

After a year of operating with staggered schedules, we feel that the advantages far outweigh the disadvantages. We feel that we have found a way to cut school costs, increase transportation safety and save teaching time—all without in any way diminishing the education we are offering our children. **End**



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How to hold cafeteria costs

School cafeterias tread a thin line between breaking even and losing money. Daily cost accounting and careful menu planning were the key elements that brought the New Paltz, N. Y., cafeteria operation out of the red.

■ ■ ■ Four years ago, New Paltz, N. Y., Central School lost $11,000 on its school food service. This year, the cafeteria will come very close to breaking even, despite the fact it is absorbing the cost of about 240 free meals a month totaling over $500 a year.

Most important single factor in bringing costs back into line, according to Business Manager Frank A. Hamilton, was the introduction of daily cost accounting.

"We probably would never have gotten around to cost accounting if we had not introduced all-paper food service and wanted to find out just what it cost per pupil and how much it was saving us," he comments. "Now I don't see how we managed to operate without it."

Mr. Hamilton cites four operating advantages resulting from the use of the daily cost system:

- It reveals immediately when and where costs are getting out of line.
- It permits "averaging out" meal costs accurately in advance.
- It develops a better understanding of costs by the cook-manager.
- It is simple and takes little time.

The accounting system is de-

DAILY COST PER MEAL

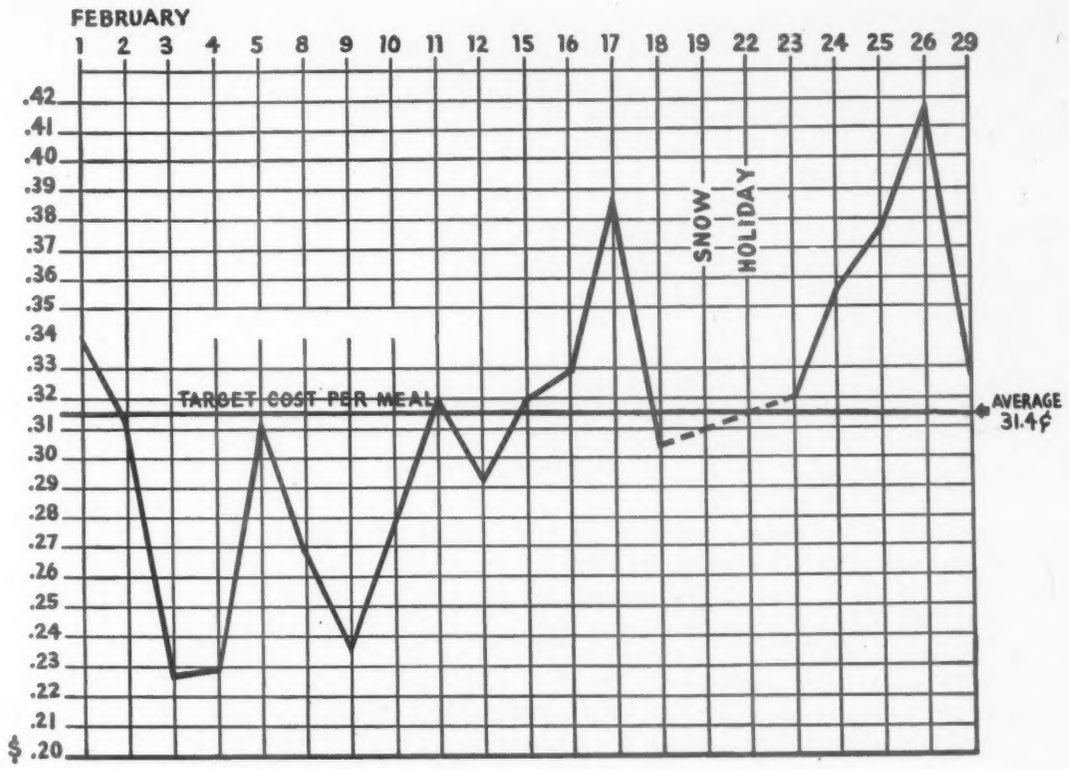
NEW PALTZ CENTRAL SCHOOLS
New Paltz, N. Y.

COST OF MEALS DATE _____

QUANTITY	UNIT	PRICE	NET	REMARKS
	Ice Cream	4.2¢		
	Milk	6.35¢		
	Plates 9" Green-Coated	1.2¢		
	Plates 6" Green, Uncoated	1¢		
	Soup Bowls	1.4¢		
	Portion Cups, 1-oz.	.237¢		
	Portion Cup, 5-oz.	.35¢		
	Cup, 5-oz. cold drink, unwaxed	.58¢		
	Labor		$54.00	

Daily cost form is basic instrument to keep cafeteria expenses down. Items used each day are listed, along with unit price. The quantity of each item consumed is also put down. By totaling amount spent on each item, daily control is assured.

down



MONTHLY ANALYSIS OF MEAL COSTS

signed to require a practical minimum of work by the cook-manager in charge of the school cafeteria and at the same time to enlist her cooperation.

Step one is to check on current costs.

Step two is to use this knowledge to estimate future costs and eliminate unnecessary expenses and waste.

The target cost per meal at New Paltz is 34 cents. Students pay 25 cents per meal if they buy a weekly or monthly meal ticket; 30 cents if they pay cash. (The higher cash charge was introduced this year to promote greater student participation by encouraging use of meal tickets.) Needy students are served free. The school is reimbursed 9 cents for every Type A lunch served, whether or not it is free to the students. Since there is no reimbursement by the state on their meals, teachers pay 35 cents.

Current costs

Basis for current costing is a one-page form (*see opposite page*). On it the cook-manager itemizes everything used for that day's meal—food, paper, labor, and miscellaneous (aprons and detergents, etc.)—and indicates quantities consumed.

The unit costs of many commonly used items are preprinted. So is total labor cost, which remains constant. The unit price of each type of paper cup, container and plate used in the food service is also listed. (Food supplies are purchased monthly by bid, so unit prices are constant during that period.)

The cashier adds cash income and the number of meals served at each price.

The business manager completes the form by adding unit cost and total cost for each item. With these figures consolidated on one sheet, it is simple to calculate the immediate meal cost per student and determine the reimbursement due from the state.

Most important, the sheet reveals immediately when and where costs have gotten out of line. For example, certain food combinations formerly used at New Paltz have been found too expensive when used together. Spaghetti was formerly served with meat balls and rye bread. Total cost of this meal is now reduced slightly by either using meat sauce instead of meat balls, or white bread instead of rye. Similarly, hot dogs are no longer served with soup; instead they are accompanied by either beans or sauerkraut.

Two additional steps complete the current cost accounting system and provide a periodic opportunity to review the operation.

First, a complete inventory is made each month of food and supplies on hand. (This takes one to two hours and is done by the cashier.) Second, using this and the daily meal cost sheets, a monthly profit and loss statement (*see illustration above*) is prepared which summarizes the efficiency of the cafeteria's operation.

Future planning

This current costing of the previous month's operation is a major step, but it still shows only what has already happened. Another step is required, and that is accomplished in a monthly meeting between the

cook-manager and Mr. Hamilton in which she submits her menus for the coming month.

On the basis of her experience, the manager estimates the quantities of the various food items that will be required, and on the basis of current food prices, the business manager estimates how much these meals will cost.

Between them, they adjust the next month's menu plan to achieve a proper level of costs. This does not mean that because the meal cost target is 34 cents, every meal has to cost just 34 cents. That would not only be extremely difficult, but might result in such monotonous food service that students would soon go elsewhere to eat. Thirty-four cents is an average, with some meals costing more, some less.

Another big benefit of this monthly discussion is that it helps the cook-manager to understand costs. She is the key person in the school food service. Making her an integral part of the management team gives her a personal interest in overall cost problems and encourages her to come up with solutions.

"Our monthly menu planning sessions have been one of the most important reasons why our food costs have gone down steadily since we introduced cost accounting," says Mr. Hamilton. "And these sessions become easier each month as we both become more experienced. Right now we are developing standard, pre-costed menus that within a few months should simplify planning even further."

Paper service

One of the important results of the cost accounting system has been the evidence it has revealed about the cost of all-paper food service, first introduced on a trial basis.

"Our paper costs have been surprisingly low and are now averaging well below 2 cents a meal, or about $1,500 a year," says Mr. Hamilton. "We feel this is in line with our other costs, particularly since it has brought with it additional advantages.

Sixty percent of the student help has been eliminated. This reduced costs approximately $900 per year in wages and free meals, in addition to reducing congestion in the kitchen and serving area. Detergent purchases have been cut in half, since dishwashing is now limited to pots, pans, trays and silverware. Significant, though still undetermined, savings will accrue in utility charges, maintenance on the dish machine and capital investment, and loss through breakage has been almost eliminated.

It is worth noting the effect of cost accounting has had on the quality of the food served. It was possible that cost, rather than quality, might have become the dominant goal, and that as a result participation by students would suffer. Quite the reverse has happened at New Paltz. Food quality is excellent, as attested by several transfer teachers who have had an opportunity to compare it with the food served in other schools, and participation is rising steadily.

In short, cost accounting has paid off in a more stable operation, and resulted in a varied menu of good food within the budget limits set. Both a benefit and the key to the success of the system is that it provides a simple, logical way to enlist the full cooperation of the person directly in charge of food preparation and service. End

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Attach additional names to separate sheet

FOOD CLINIC

Richard Flambert answers your feeding questions

QUESTION: A recent report from the U. S. Department of Labor refers to the abnormally high number of injuries and illnesses in school cafeterias. What can we do to avoid these?

■ Safety programs and suggestions as to how to avoid illness and injury are important in all school districts. Some suggestions we give to districts follow:

Health. Cafeteria employees, adult and student, must at all times be free from communicable or infectious diseases, including colds, sore throats, bronchitis, pyorrhea, gum infection, infected cuts and sores, carbuncles and pustular pimples.

Employees should remember that secretions spread from the nose and throat in coughing or sneezing are highly infectious. When coughing or sneezing is unavoidable, immediately cover nose and mouth to prevent contamination of food or utensils. Wash hands at once before again handling food.

Skin eruptions must be covered. If they are serious, the employee should consult the school nurse.

Health inspection. All employees should have a health inspection, at the school, once each semester.

Food handler's certificate. Food handler's certificates must be on file in the school office for every cafeteria employee and they must be renewed each year. The school doctor or nurse should renew the food handler's certificate by the end of September each year.

Care of hands. Hands must be washed thoroughly with soap and water prior to beginning work, after using toilet facilities, blowing nose, combing hair, touching hands to face, etc. Fingernails must be clean. Nail biters should not be permitted to work in a cafeteria.

Handling of food. Whenever practical, tongs or implements should be used instead of hands to handle food.

Safety measures. Every employee must observe the safety rules and use every precaution possible to avoid accidents. Minor accidents, cuts, burns, etc., should receive attention at once. Any accident requiring a doctor's attention should be immediately reported to the school office for action.

Use of equipment. All employees must be thoroughly instructed in the use of all appliances before operating them.

Ovens and ranges. Check ovens and ranges before lighting. Open door and if any odor of gas is detected, let it escape before lighting. Check stoves at the end of the day to be sure that ovens and all burners are turned off. Handles of pans on the stove should be turned so that there is no danger of pans being knocked off.

Lifting hot pans. Pot holders should be used in lifting hot pans from the stove. Never use aprons, uniforms, dish cloths or towels.

Matches. Unused matches must be kept in covered metal container. Used matches should be dropped into a tin or glass container, never into a trash can.

Burning fat. Fat catches fire easily. It should be closely watched. If it catches fire, spread salt or baking soda over the flame. *Do not use water.*

Hot water and steam. Turn on hot water faucets cautiously. Do not allow children to wash or rinse dishes. Lift lids on cooking foods by raising the farther edge of the cover first. This allows the steam to escape away from the face of the worker.

When pouring boiling liquid into a glass, place the glass container in

About the author. Richard Flambert is a partner in the firm of Flambert and Flambert, San Francisco, St. Louis, Omaha and Chicago, food service consultants and engineers specializing in schools and institutions. He is president of the International Society of Food Service Consultants.

a pan or sink. Put a metal knife or spoon in it to prevent the jar from breaking.

Items near stoves. Dish towels, curtains, papers, etc., should not be placed near heaters or stoves.

Falling. Any water, grease or bits of food dropped on the floor should be cleaned up immediately. If floor still feels slippery, sprinkle with salt. Boxes, mops or brooms must never be left lying around. Cupboard doors, drawers, etc., should never be left open where employees might stumble over or into them. A sturdy kitchen step-ladder should be used for climbing. Never stand on open drawers, crates, boxes, etc.

Cuts. Never chop or cut food of any kind while holding it in the hand. The smallest cut is very easily infected, and potentially serious. Sharp knives should be kept in holders or in a separate drawer. Cans should be opened with a standard can-opener.

Electrical appliances. Never use electric cords which are frayed or worn. Metal sockets and electrical equipment must never be touched with wet hands or while worker is standing on a wet floor.

Storage. Dishes, cans and all other articles should be placed firmly on shelves. Nothing should be stored on top of refrigerators, cupboards, etc. All cleaning supplies should be stored on lower shelves or in a separate cupboard.

Storage of chemicals. No insecticides, detergents, chemicals, etc., should ever be stored in kitchens or storerooms where food products are kept, except in a separate cabinet provided for that purpose. Then they must be distinctly labeled to reduce the possibility of being mistaken for foods. These must be so used as to prevent the contamination of food, preparation surfaces or utensils.

Lifting. Never lift heavy weights without help.

Splinters. Any rough edges of wood should be smoothed immediately. Splinters are dangerous.

Tainted food. The contents of any unopened cans that are bulged should not be used. If odor or appearance of any food is questionable, do not use it.

If you have any specific questions regarding the above list or any other information that would be of help to you in the campaign for safety in kitchens and cafeterias, please send them to Mr. Flambert, in care of this magazine.

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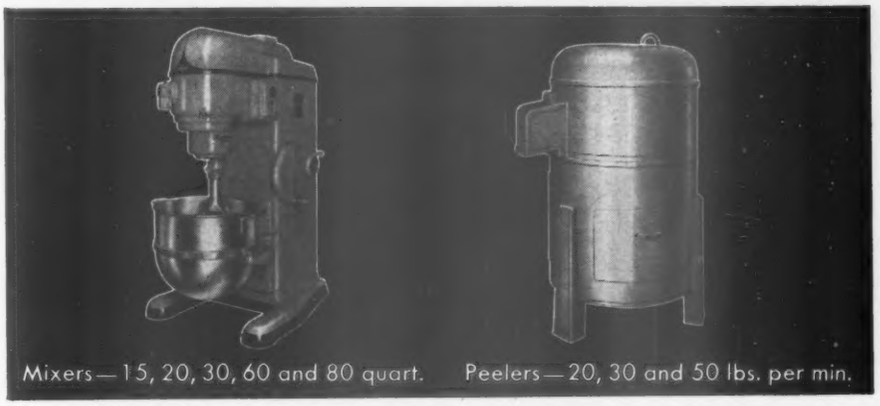

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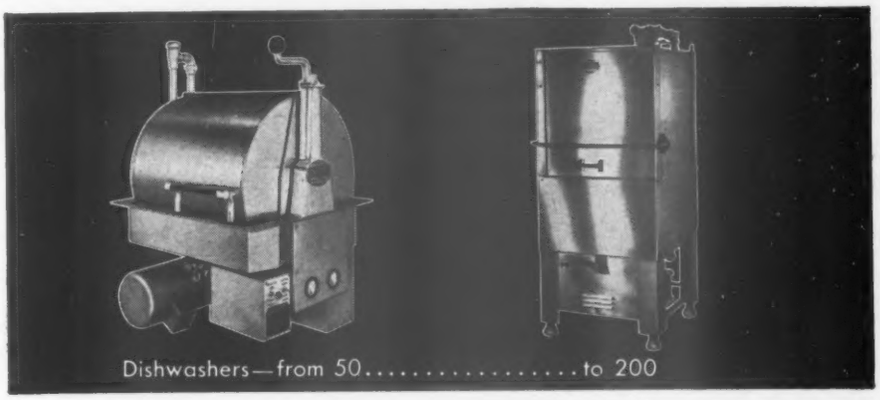

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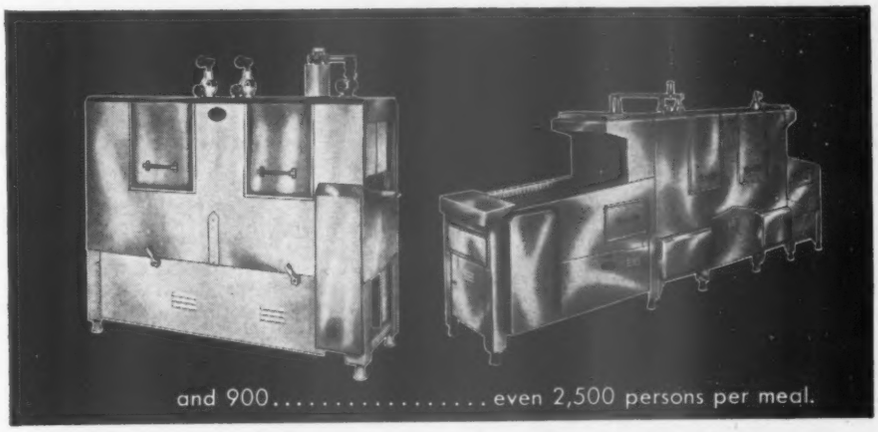
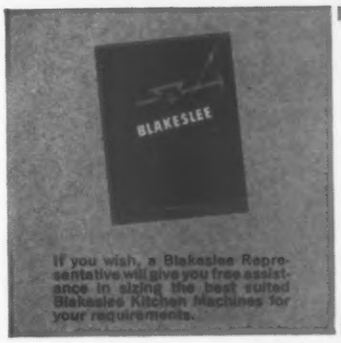


and 900.....even 2,500 persons per meal.



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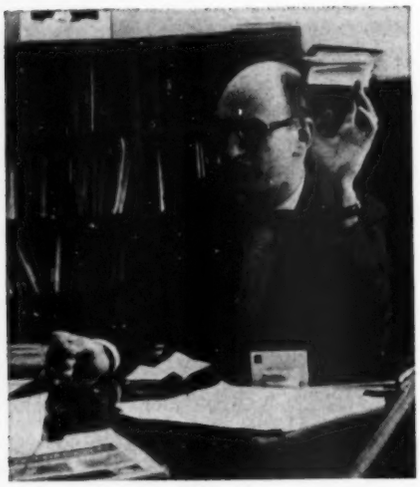
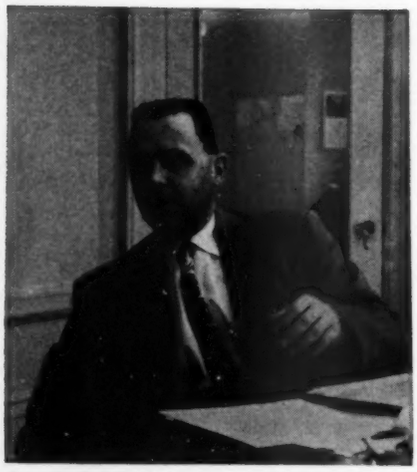
continued from page 60



"On election day, every citizen knew the issues." **GYORY**

"No board or administration has the time for PR." **FITCH**



"The PR man must dictate what, when and how." **ROACH**

tional specifications." In the third phase, we discussed "plant specifications" and had public hearings on the building itself. We showed plans, discussed site selection, and showed them illustrations of the new school. Remember, this was being done by mail and in the hearings, too. In the fourth stage, we had the wrap-up.

Q. When did your wrap-up start?

ROACH: About March 10th, a month before the election. We developed a one-hour presentation of our whole story. We actually wrote a script and held a dress rehearsal. I acted as master of ceremonies and various members of the board handled specific segments of the story. After we were well rehearsed, we held an announcement conference to which we invited about 75 key people in the community. We had the presidents of each of the 28 civic associations, the presidents of the PTA and of the teachers' association, the head of the taxpayers' association, town officials, radio and newspaper people, and some members of the school administration. The formal program lasted exactly an hour. Then we opened the meeting for discussion. At the very end, we gave each attendant a "press kit." The kit covered enrollment, the building, the cost, pictures of the school, population growth charts, etc. We tried to anticipate almost every question that could be asked.

Q. How many times did you repeat this program?

GYORY: I lost count. In addition to two large public hearings, we gave it to just about every civic association in town. We had several groups and churches schedule meetings and we told the same story each time, from a prepared script. The scripts were typed up in large bulletin type so that we could always replace one of our speakers readily if he was unable to be on hand any given night. It has been said that we had a longer run than "My Fair Lady!"

Q. What was the opposition doing during this period?

ROACH: Frankly, it never had a chance to do much of anything. We swarmed over it. For example, at every one of these meetings, when questions were asked, one of the speakers would keep notes. If something new cropped up, the public relations committee went to work on it and had a good answer hammered out by the next evening. Toward the end of our campaign, most of our printed material was done in question and answer form. We were anticipating the opposition before it could get off the ground.

Q. What about the newspapers?

ROACH: We have no town newspaper but several surrounding communities do. We got excellent cooperation from them for two reasons. First, we visited the editors personally beforehand and identified ourselves. Second, we provided them with understandable, well-organized material.

Q *What did you do about getting out the vote?*

FITCH: That specific assignment was given to the PTA. Naturally, there was a lot of duplication between our other committees and the PTA. The PTA was organized almost down to the block.

ROACH: We had registration a week before the bond issue was voted. The block leaders had a list of every family in the district. We had meetings with these block captains, prior to the vote, to see what the picture looked like. They were our feedback. When registration date came, these block captains worked with a list of all the voters in the district. They had people sitting right next to the polling clerks. As people came in to register, they took the name down and passed it back to other people who crossed the name off the list. They watched to see who hadn't come out—particularly those people who had said they were going to vote for the school—and then they phoned them to make certain that they registered. The same performance went on on election day.

Q. You mentioned earlier that you avoided the tax cost in your campaign. Will you detail that?

GYORY: Let me put it this way: The opposition had damaged us in our first campaign by insisting that we

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project an over-all tax rate for after the new school was built. The second time around, we avoided that trap. In effect, we said: "We're selling a bond issue. We're not selling a tax rate." We limited our comments on the tax effect of the single bond issue. We didn't try to forecast the future.

FITCH: I initially disagreed with the board on this point. My recommendation was to avoid an estimate. But we all finally realized that if we were to give a specific figure, the public would remember it. Then, if for any reason out of control of the board, this figure changed, it would hurt the board and administration.

Q. Didn't it sound like you were trying to evade a fact of very primary importance?

FITCH: No. Remember, it's almost impossible to predict two years in advance what your budget figure is going to be. Without that budget figure, you can't calculate your tax rate. In this district, for example, we can estimate that at any time we are going to have 250 additional kids the following year. Well, if it happens to be 300, or 350, something is going to happen to your budget. It's going to go up even more. Moreover, you can't project just exactly how much real estate is going to be on the tax roll.

ROACH: I have in front of me the notes that Dick Gyory used in answering that question. Here's what he said: "I'm sure you are thinking that the bond issue figure is not the whole bill for operating a high school. And, of course, you are right. However, we will have the other cost of high school education whether we have this new building or not. We would have to pay it through tuition to another high school, if one were available nearby, or we would have to pay if we were forced to use rented facilities and double sessions." He then went on to spell out what these costs would be. He also talked about state aid. He showed that the cost existed whether or not we built.

Q. How much did your total public relations bill come to?

GYORY: Something around $1,300. That included all the publications, all the printing, all the actual out-of-pocket cost.

Q *Looking back, do you see any mistakes that you made—any omissions that slipped by?*

FITCH: I would state that more positively. We had one definite philosophy in all of these hearings and in everything we wrote, and that was to answer every single question that was raised. When someone raised a question, we never said "no comment" or "we can't answer that." We answered it. We were positive. In addition, I think we were wise to have all of our open meetings handled by someone like Bill Roach instead of a member of the board of education. It was much easier for a non-official person to control the meetings. In fact, we persuaded the school board, more or less, to be in a position of not speaking at any of these meetings. The members sat there and, in effect, implied that they had gotten all kinds of expert advice and that the experts were presenting the material. Then, when questions came back from the floor, they didn't go to the board members but to the experts.

Q. Dr. Fitch, you obviously had a superbly conditioned community at the time the last bond issue was won last January. What have you done since to maintain that position?

FITCH: Not nearly so much as Bill Roach and I would like to see done. In fact, we presented to the school board the idea of retaining a public relations person on a part-time consultant basis to continue the program. The board agrees to the idea of a continuing program, but it hasn't budgeted any money for a consultant.

Q. Do you think the administration can do it alone?

FITCH: When any administrator is responsible for a public relations program, he doesn't have time to do the planning he should be doing. In other words, he can't have a planned, regular program in addition to all of his other work, and do both jobs properly.

Q. Could a school board member be the public relations person?

FITCH: No. I'm convinced a board member can't do that job. It requires a person who has the time to devote to a planned program, whether that person be a full-time member of the staff who has a certain amount of time allocated to it, or whether he is a part-time specialist who works closely with the administration and board. No school board member has that amount of time.

Q. Then you would recommend hiring a professional public relations man? Is there any possibility that that could have a reverse effect on local citizens—that it could imply an effort to manipulate them?

FITCH: I think this is exactly the fear of our board at the present time. I don't think it's valid. It's possible that its fear has something to do with the cost, rather than the implication of manipulation.

ROACH: I don't think there is any danger of the public resenting the idea. It might resent the money, however. If you're trying to fool the public, it's going to come out. Public relations only seems contrived when it really is. If anything, the community appreciates it when it realizes it is being kept well informed. **End**

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Cost of Education Index *continued from page 51*

housing (*see tabulations, page 50*). As the CEI figures show, schools that are spending less than $400 per pupil on current expenses have earmarked, on the average, from 13% to 15% more for school housing. Districts that are spending in excess of $400 per pupil have added only 10% for capital outlay and debt service.

This is borne out even more strongly in the Quality Quarter and Top Tenth. Nine out of 10 schools in the highest expenditure brackets are spending only 11% of their current budgets on school housing. Almost none of the schools reporting in this bracket exceeded 15%. In other words, none were in any way being forced to pull money from current needs to meet debt service and capital outlay commitments.

The lower the current expenditure, the more trouble a district is liable to find itself in over school housing costs. Again, as the CEI tabulations show, among lowest expenditure schools, one out of every 10 is carrying a debt service and capital outlay commitment of 35% or better. Moreover, a surprisingly large number of schools reported that for every dollar they spend on current operations, they are spending *at least a dollar more* on school housing.

Unfortunately, what these figures reveal is that school housing costs are proving unduly burdensome in the very districts that can least afford to undertake them. If a district is spending more than $400 per pupil on current operations—and its debt service and capital outlay payments get somewhat out of line, causing it to take some funds away from current operations—the effect will be minimal. A school spending $395 per pupil on current expenditures will still rank in the Quality Quarter nationally and will still be capable of providing its students with an educational program of the highest quality.

But if a school that is spending less than $200 per pupil is forced to take money from current operations to meet debt service payments—and this is obviously the case in more than 10% of the schools in this category—then the education it can offer its students must be very materially and dramatically affected.

HOW MUCH PER PUPIL IS SPENT FOR DEBT SERVICE, CAPITAL OUTLAY

	Average	Quality quarter	Top tenth
REGION			
1	$24	$ 46	$ 49
2	61	82	107
3	49	81	121
4	41	61	76
5	26	57	87
6	36	48	75
7	30	50	67
8	54	80	137
9	40	71	94
DISTRICT SIZE			
1 (above 25,000)	$52	$ 72	$ 84
2 (12,000-25,000)	47	71	92
3 (6,000-12,000)	46	80	111
4 (3,000-6,000)	46	79	122
5 (1,200-3,000)	43	72	115
6 (600-1,200)	41	63	89
7 (300-600)	28	54	92
EXPENDITURE LEVEL			
1 ($0 to $199)	$24	$ 39	$ 67
2 ($200 to $299)	40	60	91
3 ($300-$399)	52	78	108
4 ($400 and above)	80	115	157

HOW MUCH IS SPENT ON SCHOOL HOUSING?

How about the actual dollars spent per pupil on debt service and capital outlay? To this point we have spoken only in terms of percentages, but, as has been pointed out, some districts spending a lower percentage of their current operating expenditures on school housing may actually be providing more dollars.

As the CEI arrow shows (*this page*), the average school district spends $42 per student for school housing needs, as measured by funds expended for debt service and capital outlay. This is over and above all current expenditures. One out of four districts (the Quality Quarter) spends at least $69 per pupil, while those in the Top Tenth are spending $103 or more for every pupil on school housing.

The average district in Region 2 is spending far more than average districts anywhere else

($61 per student compared to $54 in the next highest region and as little as $24 in Region 1). Interestingly though, the average *burden* in Region 2 is just 15%, right at the national average and not at all beyond the capability of most districts (*see tabulations, page 50*). The burden was heaviest on the average schools of Region 6 (19%), even though these schools are spending considerably fewer dollars per pupil than the average schools in five other regions.

In the Quality Quarter group, districts in Region 2 still are spending slightly more dollars per pupil, but the top 25% of the districts in Regions 3 and 8 are spending almost as much. Among the Top Tenth districts, Regions 3 and 8 show the highest spenders, while schools in Region 2 drop back into third place.

Again, comparing this with percentage of total current expenditures, we find, not surprisingly, that the figure of $137 per student, spent by 10% of the districts in Region 8, tends to become an oppressive burden.

The effect of size

The CEI figures show a rather definite relationship between expenditures for school facilities and size of school districts. The largest districts are spending, on the average, $52 per pupil for capital outlay and debt service payments. This is well above the national average.

On the other end of the scale, the average smallest districts are spending just $28 per pupil on housing. And, as the tabulations show, among the average districts in each size range, as a district gets bigger it spends more per pupil on school housing. Except for the largest and smallest districts, however, this difference is relatively insignificant.

Why should there be such a discrepancy between Sizes 1 and 7? The answer would appear to lie in the fact that the smallest districts are, for the most part, located in rural areas, while the largest districts are in or around metropolitan areas. Population has been moving progressively from rural to urban centers over the past several decades. As a result, the larger districts find themselves forced to school more and more pupils. Their building programs must be increased to meet these needs. The rural areas, on the other hand, have adequate space to house the pupils sent to their schools.

This causes an additional problem for the bigger districts. They have been providing a high quality educational plant for their students. But the greatest immigration has come from comparatively *low* income groups. Can these districts afford to continue to build schools —and to provide education—at the same quality level as the one they had aspired to previously? If they do, then they are liable to find themselves in financial difficulties, since the income of the population they are taxing has been materially lowered.

What happens in the Quality Quarter and Top Tenth? There the middle-sized districts come to the fore and spend more per pupil on current expenditures than the biggest districts. (As mentioned in the second CEI article —*see SM, May, '60*—we see in the Size 7 districts, in the Top Tenth, the effect of a few small but extremely wealthy districts that raise the expenditure level inordinately above what might be expected of these schools.)

What is the reason for this? It can be speculated with confidence that the same trend that is causing the average Size 1 districts to spend more money per pupil is affecting the expenditures of about 25% of the middle-sized districts.

Here is what happens. As lower income groups move into the cities and surrounding industrial suburbs, many of the wealthier city-dwellers move out to the suburbs. These are the same people who previously had demanded a high level of education and educational facilities from the largest districts in which they had been residing. Now their pressures are being felt in the suburbs. They are forcing school districts in these suburbs to invest greater and

HOW THE COST OF EDUCATION INDEX WAS COMPILED

Hundreds of school districts participated in building SM's Cost of Education Index. Each filled out a detailed four-page questionnaire which itemized expenditures for dozens of budget items, for a two-year period (1958-59 and 1959-60).

This questionnaire was devised by Dr. Orlando F. Furno, who is presently with the U.S. Office of Education. It was at his suggestion, and with his guidance, that this project was developed.

The final total of school districts used in the carefully weighted sample was 583. Each was selected because it represented, by virtue of geographical location, size, and cost per pupil, a randomly selected unit of measurement. The accumulated data is being processed in an electronic computer.

greater amounts not only in school housing, but in the school program generally. Thus we see (*see tabulations on page 50*) that while these districts are not spending a huge *percentage* of their funds on building, they are spending a great number of dollars.

THE EFFECT OF EXPENDITURE LEVEL

As might be predicted, districts spending more per pupil on operating costs tend to spend more dollars, too, on school housing. In the lowest expenditure group, half the districts spend no more than $24 per pupil on capital outlay and debt service. One-quarter of the schools in this group spends $39 per pupil while only one in 10 spends as much as $67. And this is a heavy burden.

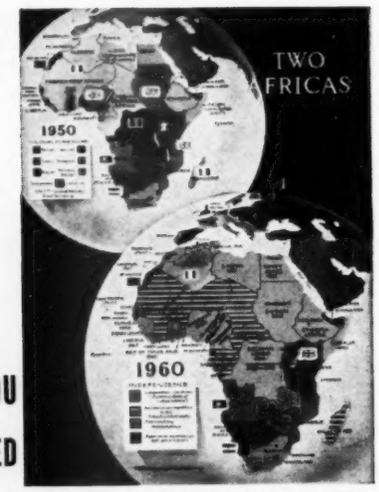
In the top expenditure group—those allocating $400 or more per student to current operations—half of the schools are spending more than $80 per pupil on housing, while some districts are spending in excess of $157 per pupil.

The CEI tabulations show that as current expenditures per pupil rise, debt service and capital outlay also rise, whether a school falls in the average, Quality Quarter or Top Tenth range of its own level.

It would seem that a district spending $80 per pupil on housing might be in danger of over-extending itself in this area, while one that allocated $24 per pupil would probably not be doing so. But, as has been stated before, it is the percentage of current expenditures spent on housing that really determines the burden debt service and capital outlay are putting on a district.

Research has tended to show that 25% is the point at which districts probably start to over-extend themselves. Actually, in districts with low per pupil expendtures, capital outlay and debt service payments that equalled 20% of total current expenses would very likely already form a major burden for the district. If total current expenditures are high, housing payments of 30% or even 35% might be borne without seriously injuring the quality of the district's educational program. The chances are great, however, that even in most of these districts the burdens of school housing would start eroding the quality of the current educational program.

It would seem from these facts, brought out by the CEI study, that some means must be found to aid those districts which are having difficulty assuming the financial burdens of school housing *while still trying to maintain a quality educational program*. Whether this help will come from state sources, additional taxing powers to localities, or federal aid reaches into an area beyond the scope of this report. **End**



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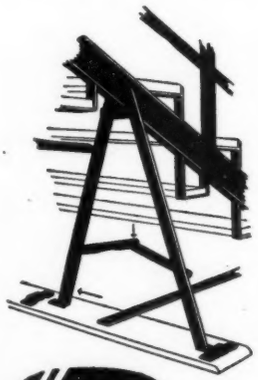

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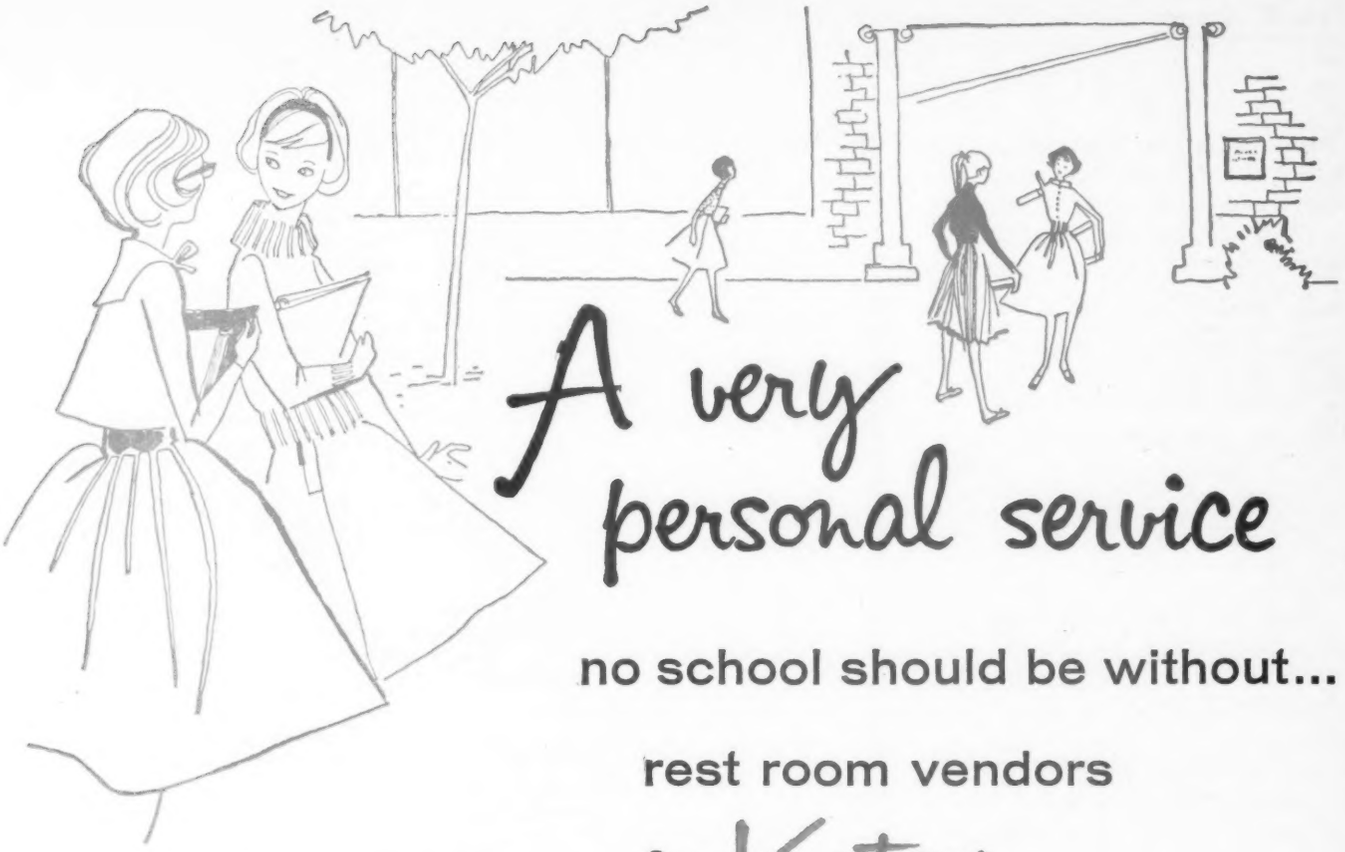

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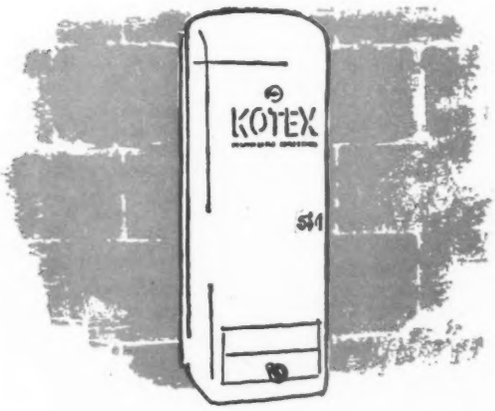

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the availability of professional materials elsewhere in the community. *These expenditures are in addition to those allocated for other school library materials.*

New school libraries

The objectives of the library program in new schools are the same as those set for established schools, though it may take longer to reach them in the new school. To get the full program going as quickly as possible requires considerable planning and work *in advance* of school opening.

Staff. For schools anticipating enrollments of less than 1,000 students, a librarian should be employed a *full academic year* before school opening. Schools expecting to enroll more than 1,000 students should employ more than one librarian for a full year before the official start of school. Exactly how many more librarians depends upon a number of factors:

- The size of initial collections.
- The time allowed for planning and organizing the collections.
- The time allowed for filling orders (book orders take from four to six weeks to be filled).
- The time allowed for technical processing to be done by the librarian (at least 10 minutes per book, plus additional time for audio-visual materials).
- The time allowed the librarian for preparation to perform his professional activities—study of curriculum, selection of materials, planning of school's library program, etc.
- The amount of clerical assistance available to the librarian.

The staffing needs in the new school after it is opened are never less than those of established schools. Where projected student enrollment will not be reached for two or three years, the number of library staff members from the very beginning should equal that required for full anticipated enrollment. Reason: it takes time—and hands—to build from nothing.

Materials. The size of the initial book collection in new schools of 200-499 students should be at least

HOW TO EQUIP YOUR LIBRARY

To be of any value in your school, your library's materials collections should be adequately housed, readily available and easy to use. This requires quarters which feature plenty of space and sound, functional equipment. Spelled out below are some guides drawn from the ALA's recommendations for libraries in schools with more than 200 students.

Reading room

Accommodates 10% of enrollment in schools with more than 550 students; 45-55 students in 200-550-pupil schools. Maximum seating in a single reading room: 100 (preferably 80, if possible). Space allowed each reader: 30-35 square feet. Space between adjacent tables: five feet. Space between tables and shelving: five feet.

Houses at least three-fourths of total book collection. Contains special shelving for reference books, magazines, odd-sized volumes; several recessed tack boards and pegboards; and enough space for circulation desk, card catalog case, files, other free-standing, mobile equipment.

Listening and viewing area

Equipped with viewing cubicles, table projectors for filmstrips, table record players with earphone attachments, mobile phono-carts and similar equipment.

Required in schools with up to 500 students:

One workroom-storage area for printed and audio-visual materials and equipment (about 400 square feet).

Required in schools enrolling more than 500:

Audio-visual equipment	300-400 square feet.
Audio-visual materials	300-400 square feet.
Viewing and listening area	800-1,000 square feet.
Administration of audio-visual	150-200 square feet.

Conference room area

Schools with less than 1,000 students: one conference room.
Schools with more than 1,000 students: two or more conference rooms.

Requirements:

Adjacent to and connected with main reading room.
At least 120 square feet in each room.
Acoustically treated walls and ceilings.
Glass partitions separating conference rooms from reading rooms.
Equipped with table, chairs, shelving, listening and viewing equipment, bulletin board, chalkboard, shelving for recordings.

Classroom area

Essential in every library for instructional program and for use of teachers, small groups and student committees working with special materials. Adjacent to and connected with reading room, it is furnished with tables, chairs, shelving, chalkboard and audio-visual and other equipment.

Stack area

Located in an area adjoining, but not part of, library reading room; it is adequately lighted and ventilated and allowance is made for future expansion of collections.

Work and office area

In schools with up to 500 students:

One workroom-storage area for materials and equipment.
About 200 square feet allowed for audio-visual materials; same space allowed for printed materials.
All workrooms include hard-surfaced counter tops, work sink, variety of storage drawers and cupboards. Counters of two heights are provided for use as desk space and typing shelf.

Other areas

A room to house professional materials collections.
A magazine room for current and back-issue periodicals and for microfilm equipment.
An informal reading area, comfortably furnished.

Other requirements

Duplex outlets on each wall of reading room, in classroom and audio-visual areas, above work counter in work room, in office and in conference rooms.

Telephone outlets in office and wherever else needed. Intercommunication outlet in office and wherever else needed. Noise-reducing floor coverings (rubber, vinyl, cork, etc.) throughout. Acoustically-treated ceilings throughout. Drapes and blinds on windows for light control.

Equipment

Shelving specifications (standard)

Width of section on centers	3 feet
Depth	
Standard	8-10 inches
Oversize	10-12 inches
Thickness	13/16 inch
Height of base section	4-6 inches
Height of cornice, where used	2 inches
Total height of standard section	
Elementary school	5-6 feet
Junior high school	6 feet
Senior high school	6-7 feet
Total height of counter section	30-42 inches
Space between shelves	10-10½ inches
(Adjustable shelves take care of oversize books)	

Shelving specifications (special)

For current periodicals	
Depth of slanting shelves	16 inches
Depth of shelves, straight across	12 inches
For back issues of periodicals	
Depth of shelves	12-15 inches
For elementary picture books	
Depth of shelves	12 inches
Space between shelves	14-16 inches
For phonograph records	
Depth of shelves	16 inches
Space between shelves	14 inches and 18 inches
Capacity estimates	
Number of books per 3-foot shelf	
Average size books	30
Reference books	18
Picture books	60

Tables and chairs

A minimum of 30 inches per reader is allowed in table lengths. Chairs with saddle seats and curved are recommended for comfort.

SPECIFICATIONS:	TABLES			CHAIRS	
	Height	Width	Length	Diameter	Height
Elementary school	25-28 inches	3 feet	58-68 inches	4 feet	14-17 inches
Junior high school	27-30 inches	3 feet	5-6 feet	4 feet	16-18 inches
Senior high school	29-30 inches	3 feet	5-6 feet	4 feet	18 inches

Audio-visual equipment: minimum requirements

16mm sound projector: One per 300 students; at least one per building.
Filmstrip and 2 x 2 projector: One per 300 students; at least one per building.
Opaque projector: One per building.
Record player (three or four speed): One per kindergarten; one per five other classrooms; at least two per building; at least one equipped with earphones.
Tape recorder: One per 300 students; at least one per building.
Projection screen (at least 5 x 5 feet): One per two classrooms.
Overhead projector (7 x 7 inches or larger): At least one per building.
Radio (AM-FM) receiver: One per five classrooms; at least two per building.
Television all-channel receiver: One per five classrooms; at least two per building.

Other equipment

Circulation desk is L-shaped, rectangular or U-shaped, with space for filing trays for book cards and shelving for books.
Card catalog cabinet is standard unit of sectional cases to allow for future expansion. One tray section holds 1,000 cards.
Wall glass exhibit case is placed in corridor outside library. These are well lighted and equipped with glass shelves, bulletin board backing and glass doors with locks.
Other requirements: Book trucks, legal size filing cabinets, dictionary stands, atlas stands, large picture files, typewriters, office desks and posture chairs. Also recommended: mechanical copying machines, electrical time stamps and microreaders.
Additional suggestions: Window seats, informal furniture, exhibits, pictures, plants and art objects to make library pleasant and inviting.

3,000 books. Schools of 500-1,499 students require at least 5,000 books and schools with more than 1,500 students need at least one-third the number recommended for established schools. This initial collection should be systematically expanded until it reaches the recommended size. This should take no more than four years.

Initial collections of audio-visual, printed, supplementary and professional materials should be large enough to fill the immediate needs of students and faculty when the school opens and expanded as needed from that time on. Newspapers and magazines can be immediately available in the same amounts recommended for established libraries.

Budget. Proper allocation of funds for new school libraries depends upon consideration of several factors:

- The cost of new books—$3, $3.50 and $4 per volume as described above.
- The cost of processing supplies. These average about 25 cents per book (almost 15 cents for each duplicate title).
- Additional funds for encyclopedias, unabridged dictionaries, audio-visual materials, magazines, newspapers, professional materials, supplementary materials and a variety of supplies needed when school opens.
- After a new school opens, its materials budget for the library is larger than that for established schools until the day (not more than four years later) when its basic collections meet recommended standards.

Libraries in small schools

Small schools are those with enrollments of less than 200 pupils in any combination of grades up through 12 and ranging in faculty size from one to as many as seven or eight teachers.

Materials. The basic book collection should be carefully selected, readily accessible to everyone in the school and contain a minimum of 6,000 books if the enrollment is as much as 200. Schools with fewer students can reduce their total num-

ber of books in proportion to the enrollment.

Ten to 15 titles are adequate for the magazine collection. The reference section must include a minimum of several dictionaries, one encyclopedia, a world atlas and an almanac. In addition, filmstrips and recordings that are used several times a year can be kept in the library, together with a selection of pamphlets, pictures and other vertical file material.

Quarters. Wherever possible, a library room—large enough to seat one class group and to house the basic collections as well as materials on loan from a central library agency—should be established within the school. Shelves, appropriate tables and chairs, a card catalog case, a vertical file, a book truck and a desk are necessary equipment. In two-teacher schools serving different grades, it is best to permit each room to maintain its own collections.

Staff. A classroom teacher may be responsible for the library program in a small school or it may be administered by a field librarian who travels from school to school. Every school, no matter how small, would be visited occasionally by the school librarian.

Even one-teacher schools should have the services of a school librarian once a week to work with students and advise the teacher. If enrollment reaches 75, a full day each week is required of a visiting librarian. When enrollment gets as high as 150, the school needs the services of at least a half-time librarian.

The number of schools a single librarian can serve depends upon the enrollments and the distance each school is from the others. Consulting with teachers and advising them about library materials and their uses is probably the most important function of the librarian serving small schools since the classroom teacher, in effect, carries out the entire library program during most of the school year.

Central agencies

Some sort of cooperative plan is necessary to insure a good library program in small schools. To be successful, such a plan includes establishment of a central service agency which provides the services of visiting librarians, a pool of printed and audio-visual materials from which individual small schools may draw to supplement their own collections, and a supply of professional curriculum and instructional materials for the use of teachers.

This central agency requires quarters consisting of office, workroom and storage space large enough to administer effectively library programs for the number of schools participating in the cooperative plan. In addition, the agency has to have the services of professional librarians, clerks and maintenance workers to handle field work and the maintenance and delivery of materials.

These cooperative library plans grow from contractual agreements between small and large school districts, small districts and nearby colleges, small districts and public, county or regional library agencies or—ideally—between small districts and a legally established intermediate unit. Staffed and equipped to function as a central library agency, the unit can serve a number of separate districts and usually operates best on a minimum pupil population base of about 10,000. **End**

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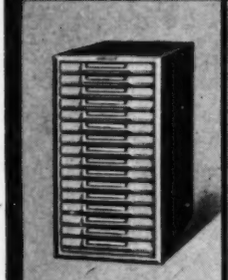

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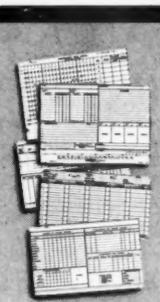

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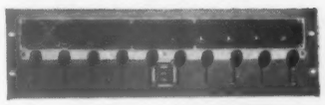

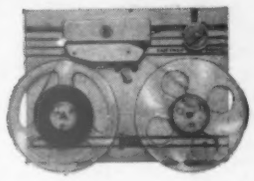

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New adjusting mechanism insures quick, sure, non-jamming action. Typewriter platform may be raised or lowered to fit each student. Spacious storage area for books and papers, with pull-out shelf for dictation. Choice of frame colors with wood or solid Fiberesin top. Comes in both left- and right-handed models with matching chair.

Royal Metal Manufacturing Company
School Dept. 37-F, One Park Avenue, New York 16, N.Y.

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Name_____

Address_____

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Royal SCHOOL FURNITURE

(Circle number 747 for more information)

Yours for the asking

continued from page 36

lum. A film programming record outlines the films within these areas and serves as a page index reference. A supplementary index helps the film user find all the films dealing with a wide range of subjects not identifiable from titles alone. Also included is an alphabetical list of films by title and a list of libraries from which Coronet films may be rented.

For a free copy of this catalog, circle number 862 on the Reader Service Card.

School sound systems. A new folder on school sound systems has been issued by DuKane Corp. A special chart shows typical sound systems used in schools requiring 16 to 150 or more classroom speakers. The chart also shows the number of program and intercom channels, maximum number of rooms, watt output for both program and intercom channels, the number of microphone inputs and the program facilities with each system.

For a free copy of this folder, circle number 843 on the Reader Service Card.

Science education bibliography. A 10-page selected bibliography on science education and careers for the science and engineering student, "Closing the Gap" is now available from Scientific Apparatus Makers Assoc. Compiled with the aid of the U.S. Office of Education and other professional societies and government agencies, this booklet endeavors to provide the student with an abridged reference guide to some of the most worthwhile material on science.

For a free copy of this bibliography, circle number 848 on the Reader Service Card.

Mail-handling equipment. Mail chutes, mail boxes, lock type letter boxes and mailroom equipment of all kinds are described and illustrated in a 12-page catalog available from Cutler Mail Chute Co. Typical specifications, dimensions and a yardstick for figuring total space required for letter boxes are included to help planners with the installation of mail-handling equipment. Also described are a variety of letter chutes—including single, twin, extra wide, communication—and communication drop pockets. The final section provides information on street boxes and mailroom-handling equipment.

For a free copy of this catalog, circle number 838 on the Reader Service Card.

PRESS RELEASES

News from the business firms serving your schools

Early fire warning

Departing from the more usual types of heat- and smoke-sensitive fire detection equipment, a new device from Pyrotronics is activated instead by microscopic and invisible air-borne products of combustion. Since is does not require heat, smoke or flame to trigger an alarm, it can provide the earliest possible warning for all types of fires. A fire's smoldering stage can exist for hours or even days before flame and heat are evident. But once the heat stage is reached, a dangerous fire condition exists and little time remains for life-saving steps to be taken.

The new device detects smoldering, incipient fires—it even warns of dangerously overloaded electrical equipment—as they develop, allowing sufficient time to evacuate buildings and get fire-fighting equipment to the scene soon enough to extinguish flames before they do heavy damage.

For more information, circle number 868 on the Reader Service Card.

■ ■ ■

New classroom seating line

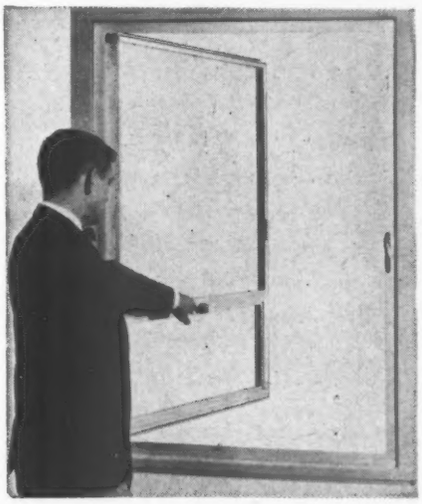
Arlington Seating Co. has introduced a completely new line of school desks and chairs with a unique seat frame structure. According to the manufacturer, the over-all result of the structural change is better appearance, proper posture correlation and greater seating comfort. The new line is offered in 12 different design models, each in a standard range of sizes. Included are chairs, lift lid and open book box desks, chair desks, study desks, tablet arm chairs and upholstered chairs. Literature covering the new line is now available.

For more information, please circle 835 on the Reader Service Card.

■ ■ ■

Emergency exit window

A new aluminum window that doubles as an emergency exit to permit quick evacuation of ground-floor classrooms and single story buildings



is available from the Michael Flynn Manufacturing Co. The window resembles, and can be used with, standard projected windows. It is hung on three hinges that allow the complete window to swing outward 180 degrees from its frame. In addition to its emergency exit feature, the window offers all the advantages of regular projected ventilator windows.

For more information circle 894 on the Reader Service Card.

■ ■ ■

Filmstrips on guidance

A series of filmstrips to aid guidance counselors has been announced by the Society For Visual Education, Inc. The first eight strips in this new series cover such subjects as "Dating Topics for Young Teens" and "Dating Topics for Older Teens." Each complete set of four filmstrips and two records is available at a cost of $25.50 per set. They are recommended for purchase

FRANK A. HAMILTON, Business Manager
New Paltz Central School
New Paltz, New York

"We Cut Our Cafeteria Losses from $11,000 to Practically Nothing with Paper Service"

Last fall, Mr. Hamilton started paper food service in the school lunchroom in New Paltz, New York, and has made careful daily cost records ever since.

While no public school lunchroom is expected to be a profit-making proposition for the community, paper food service is bringing about a substantial change in operational costs at the New Paltz school.

From an $11,000 loss in the first year of operation, when conventional service was used, the cafeteria has cut its deficit to practically nothing, thanks to the efficiency of paper cups and containers. This accomplishment is all the more remarkable because now, for the first time, the cost figures include the salaries of managerial and lunch personnel.

HELPFUL IDEAS FOR YOU

The above brief report is further evidence of how the many advantages of all-paper service can improve any mass feeding operation, large or small. Your paper wholesaler will be glad to discuss with you how this modern food service can be of practical value in your own operation. Phone him today.

The Paper Cup and Container Institute, Inc.
250 Park Avenue, New York 17, N. Y.

PAPER
the personal food service

(Circle number 742 for more information)

under Title V of the National Defense Education Act and are suitable for showings to teachers, parents of teenagers, and guidance personnel.

For more information, circle 852 on the Reader Service Card.

■ ■ ■

Universal vise

A universal school shop vise, designed by Wilton Tool Mfg. Co., Inc., permits industrial arts instructors to teach more shop subjects in the same shop. The Universal Turret vise, which is suitable for woodworking, metalworking, electrical, sheet metalworking and crafts courses, has a three-inch by seven-inch woodworking jaw, a serrated steel jaw measuring one inch by four inches, a maximum opening of five-and-one-half inches and a pipe capacity of ¼-inch to four-and-one-half inches. Capable of 180-degree vertical rotation, its maple jaw faces and serrated steel jaw faces are furnished as standard equipment.

For more information, circle number 897 on the Reader Service Card.

■ ■ ■

Filmstrip previewer

A portable desktop previewer designed to assist audio-visual directors and teachers has recently been announced by the Viewlex Co. Its chief function is to assist educators with the problem of quickly reviewing the ever-increasing number of filmstrips available for school use. Packaged in a luggage type carrying case that is only four inches, by six inches by 12 inches, it may be used anywhere and under any lighting conditions. Threading is virtually instantaneous and a focusing knob makes it possible to sharpen any color or black and white image on the seven-inch by nine-inch ground glass viewing screen. The machine weighs only six pounds.

For more information, please circle number 896 on the Reader Service Card.

■ ■ ■

One-piece aluminum scaffold

A new one-piece scaffold that can be erected in seconds is being marketed by Up-Right Scaffolds Co. The scaffold is formed from two folding V braces which snap together and lock automatically to form a rigid X brace joint to support the structure. One man can erect the scaffold and move it easily on its own large casters. When open, the unit is 10 feet long and only 29 inches wide, so it can be rolled through doorways and down narrow aisles.

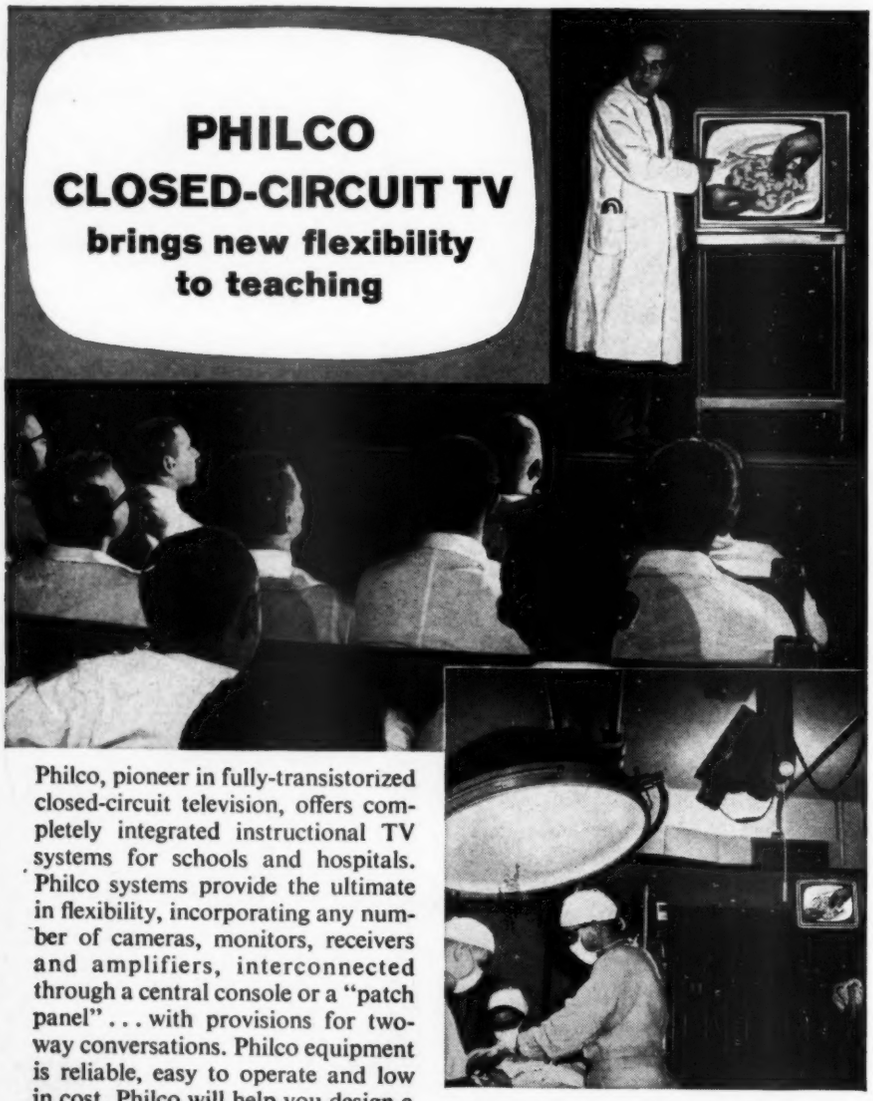
For more information, circle number 900 on the Reader Service Card.

■ ■ ■

Electronic pool alarm

A highly sensitive electronic alarm, designed to prevent the drowning tragedies that sometimes occur at unattended swimming pools, is offered by Minneapolis-Honeywell Regulator Co. The system—which can be installed in new and existing pools for less than $200—includes a sensing element submerged approximately a

PHILCO CLOSED-CIRCUIT TV brings new flexibility to teaching



Philco, pioneer in fully-transistorized closed-circuit television, offers completely integrated instructional TV systems for schools and hospitals. Philco systems provide the ultimate in flexibility, incorporating any number of cameras, monitors, receivers and amplifiers, interconnected through a central console or a "patch panel" . . . with provisions for two-way conversations. Philco equipment is reliable, easy to operate and low in cost. Philco will help you design a system to meet your requirements. Write for information and your Philco Closed-Circuit TV Planning Guide.

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PHILCO®
Famous for Quality the World Over

The World's First Integrated Hospital Closed-Circuit TV System was recently installed by Philco at St. Christopher's Hospital for Children, Philadelphia. It links the main operating room, lecture halls, auditorium, pediatric treatment rooms, psychologic observation rooms and the radiology department. Folder describing this system will be sent upon request.

(Circle number 743 for more information)

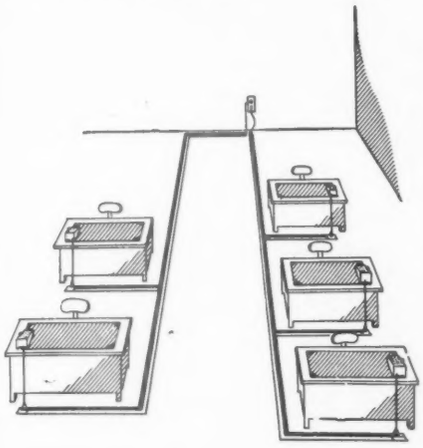
foot below the water surface and a remotely located alarm panel. When something falls into the water, the sensing element detects the sound vibrations caused by the splash and electronically relays a signal to the alarm panel which can be located up to 100 feet from the pool. An alarm horn is then sounded in order to summon aid to the pool area instantly.

For more information, circle number 879 on the Reader Service Card.

■ ■ ■

Over-the-floor wiring

Developed for commercial office use, a new over-the-floor electrical wiring system called Electriduct has considerable potential for schools. It solves the problem of obtaining electrical outlets in the middle of the room safely and neatly. The device is nearly flat, rubber-encased wiring, which is stumbleproof and permits equipment on casters to be rolled over it easily. The item is available in a variety of lengths.



For more information, circle 844 on the Reader Service Card.

■ ■ ■

Horizontal storage rack

A horizontal storage rack for heavy items is a new product of the Columbia-Hallowell Division of the SPS Company. Built of heavy-duty steel it is ideal for the storage of heavy lumber, pipes, and other materials used in school shops and maintenance depots.

The racks permit additional four-foot-wide sections to be attached to the basic model as storage requirements grow.

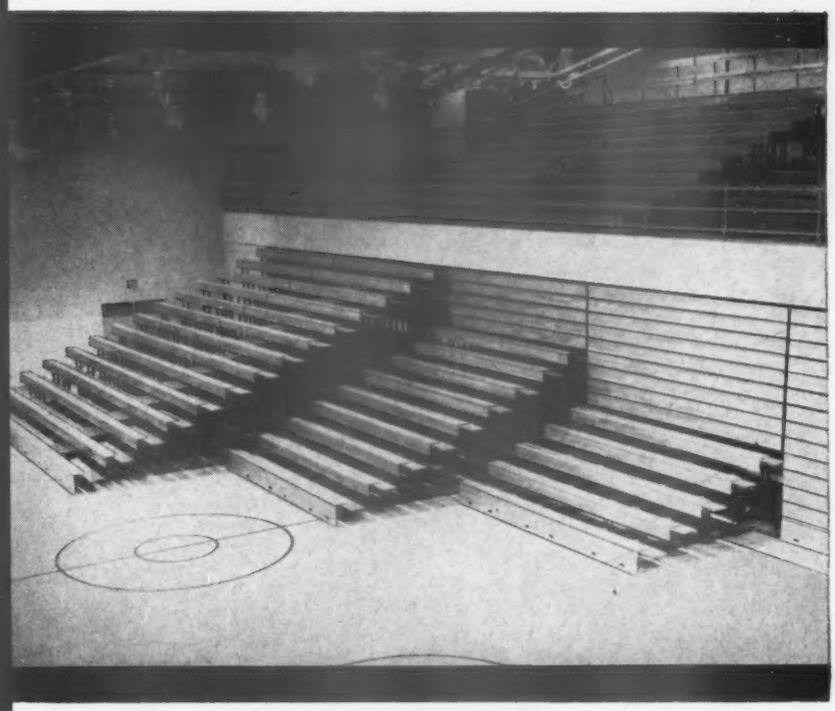
For more information, circle number 884 on the Reader Service Card.

■ ■ ■

Portable serving unit

A portable hot and cold serving unit, designed to handle school feeding at a distance from the food preparation

get versatile gymnasium seating for your new or present school building



SAFWAY

TELESCOPING GYM SEATS

permit quick, easy set-up changes for every gymnasium event

YOU CAN assure profitable *full-time use* of your school gymnasium —planned or existing—with this modern equipment, available in recessed, wall-attached, movable and reverse-fold types. Seating set-up changes are made quickly to fit every event. Any number of rows can be locked open (*see photo*). Safway telescoping gym seats give you these practical advantages:

SPECTATOR COMFORT—Good sight lines from every seat. Ample foot and knee room; comfortable inclined seats.

COMPLETE SAFETY—Full protection for spectators, gym users and maintenance personnel.

FLOOR PROTECTION—Non-marking wheels roll in separate tracks to prevent grooving.

EASY OPERATION—Straight-line tracking with extra-large wheels and nylon glides. Motorized operation available (*not needed under 14 rows*).

GOOD LOOKS—Seats nest back into a handsome vertical cabinet. Safway's rich, warm Golden Oak finish will be in harmony with any interior.

SAFWAY

see our catalog in Sweet's or write for copy

SAFWAY STEEL PRODUCTS, INC.
6228 W. State Street
MILWAUKEE 13, WISCONSIN

WRITE FOR BULLETIN 166V

(Circle number 748 for more information)

area, has been developed by the Swartzbaugh Mfg. Co. In addition to providing a suitable serving unit, the truck maintains proper serving temperatures of both hot and cold items. Units are available to provide capacity up to 348 quarts of food. A variety of pan combinations provide versatility and menu flexibility. The units are constructed of nickel-bearing stainless steel and the body and doors are insulated with fiberglass. Heat control is by thermostat.

For more information, circle 898 on the Reader Service Card.

■ ■ ■

Sound slidefilm projector

A portable projector, featuring a new automatic film feed and take-up that completely eliminates rewinding, has been designated the Picturephone Model N by the manufacturer, McClure Projectors, Inc. The 13-pound unit is self-contained, includes a built-in projection screen and can be used in an undarkened room. The projector accommodates phonograph records in the three standard speeds. The records and other material can easily be stored in its cover. A high fidelity, five-inch speaker with a wide volume range makes the unit adaptable for showings to large or small groups.

For more information, circle number 853 on the Reader Service Card.

■ ■ ■

Upholstered stack chairs

A deep-cushioned but sturdily constructed stack chair has been announced by the Harter Corp. Designed to fill special seating needs for meetings, conferences, and board-rooms, it also offers easy stackability without sacrificing comfort.

The chairs can be stacked eight high. The seats have a thick upholstering of molded foam rubber and are offered in wide range of colors and fabrics.

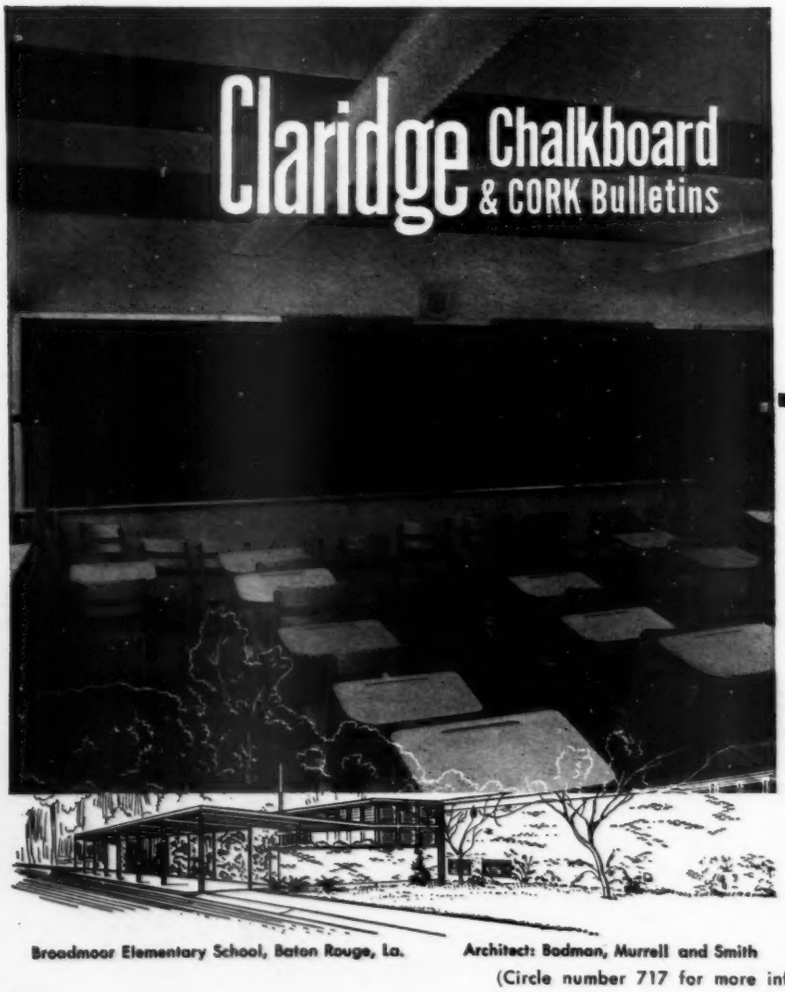
For more information, please circle number 882 on the Reader Service Card.

■ ■ ■

Safe, efficient disinfectant

A proportion-controlled bowl cleaner in 40-gram water-soluble packets has just been introduced by Piatt & Smillie Chemicals, Inc. The application packet of First Glo-Bol is made of transparent film which dissolves in seconds when dropped into the toilet bowl, releasing the cleaning granules into the water. User's hands never come into contact with active ingredients because the packet is never opened, thus exposure hazards to personnel, clothing, floors and walls from spillage, breakage, fuming or acid back-splash are eliminated. The product does not become active until several seconds after it is safely in the bowl.

For more information, circle number 889 on the Reader Service Card.



Broadmoor Elementary School, Baton Rouge, La. Architect: Bodman, Murrell and Smith

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NEW! Full Color Catalog

Larger, many real colors, more detail to help you solve replacement, remodeling, or new building problems. You'll find much helpful information.

Claridge PRODUCTS and Equipment Inc.
HARRISON, ARKANSAS

☐ Please send catalog 460 ☐ Send samples or additional data on items circled below:

1 Duracite Chalkboards in Seven Colors
2 Grapholite Chalkboards
3 Asbestocite Chalkboards
4 Horizontal Sliding Chalkboards
5 Vitracite Porcelain Enamel Chalkboards
6 Durasteel Chalkboards in Seven Colors
7 Fabricork Fabric Surface Bulletin Boards
8 Extruded Aluminum Chalkboard and Corkboard Trim
9 Claridge Factory Built Chalkboards and Bulletin Boards
10 Claridge Washable Chalkboards
11 Vertical Sliding Chalkboards
12 Claridge Reversible Chalkboards and Bulletin Boards
13 Extruded Aluminum Display and Trophy Cases
14 Extruded Aluminum Bulletin Board
15 Claridge Swing Leaf Display Boards

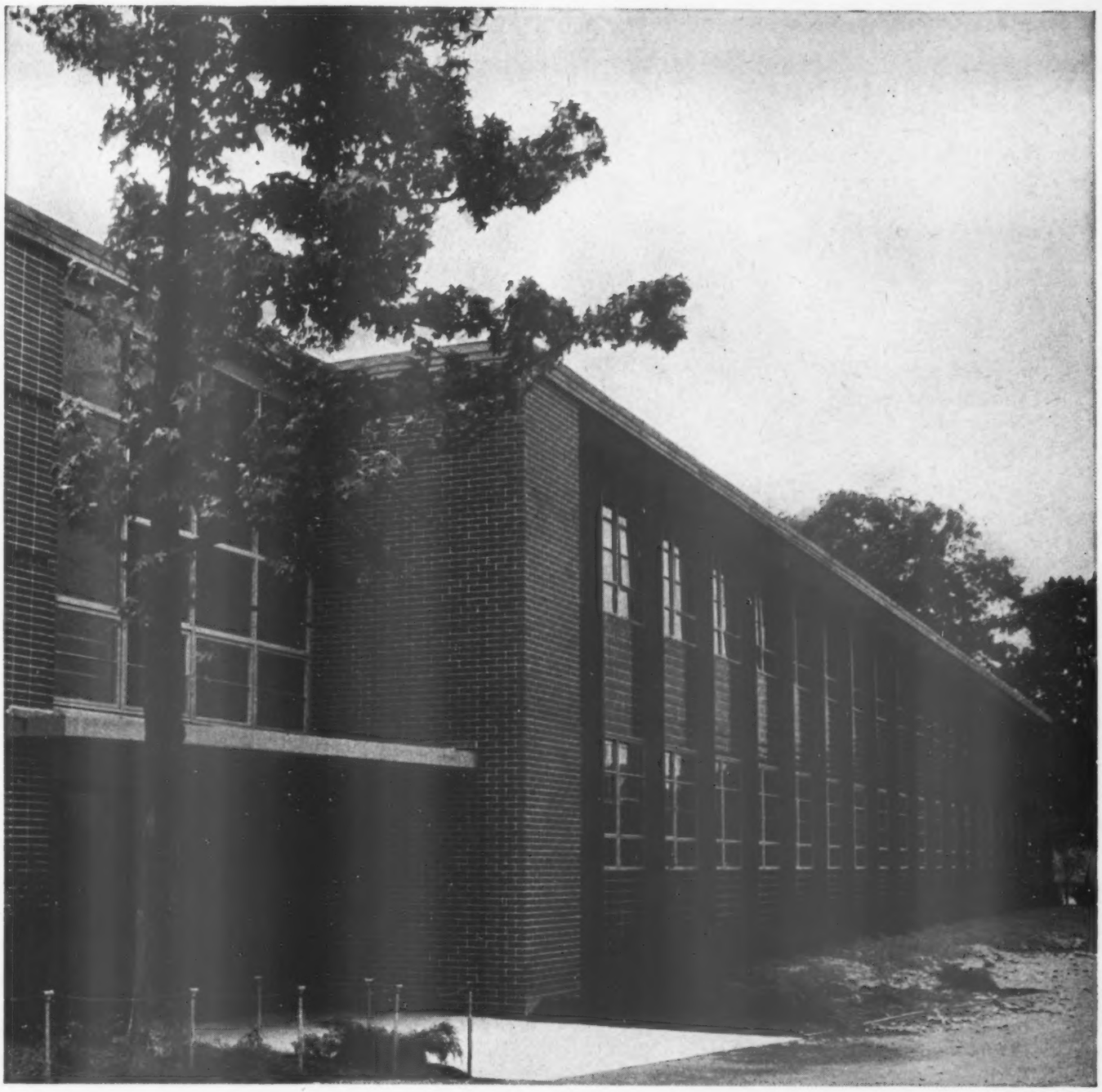
Name_____

School_____

Address_____

City_____ Zone_____ State_____

(Circle number 717 for more information)



Why so many Birmingham schools heat with LO-BLAST GAS burners

"With the style of architecture we want here in Birmingham, we find that it's more practical to have small gas-fired boilers in each school building rather than build a central plant and pipe heat to each building," says Mr. Fred J. Kelley, Business Manager of the City Board of Education.

"That's one of the reasons why we specified Lo-Blast Power Gas burners for many of our new schools. These units adapt most easily to the boilers we use. What's more, they have a very good record here in Birmingham for safe, consistent performance plus low-cost installation and operation."

Gas heating can give your schools safe, economical service—especially with the new Lo-Blast burners made by Mid-Continent Metal Products. For complete information, check with your local gas company's Heating Specialist, or write Mid-Continent Metal Products Co., 1960 N. Clybourn Ave., Chicago 14, Illinois.

AMERICAN GAS ASSOCIATION

Economite and Lo-Blast Power Gas Burners operate silently, cost less to install, are well suited for down-draft boilers, and are available in capacities from 70,000 to 20,000,000 BTU.

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In the New Mills High School . . .

MISCO WIRE GLASS COMBINES BEAUTY and PROTECTION

The desirable combination of attractive appearance and fire safety are happily united in the new Mills High School, of the San Mateo Union High School District at Millbrae, California. Here 15,000 square feet of handsome Mississippi Polished Misco offer the proven protection of wire glass to help safeguard students and building against tragic and costly fire losses. A recognized fire retardant, Mississippi Wire Glass is the original solid wire glass upon which the Underwriters' standard was based in 1899 . . . the standard today by which all others are judged. Don't bargain with safety. Give your school the protection that only wire glass affords. Specify Mississippi Wire Glass. Available in "see-through" or obscure patterns wherever quality glass is sold.

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San Francisco, Calif.
Partner-in-charge: Burton L. Rockwell, A.I.A.
Glass and Glazing: San Francisco Glass Company

Write for free catalog. Address Department 17.

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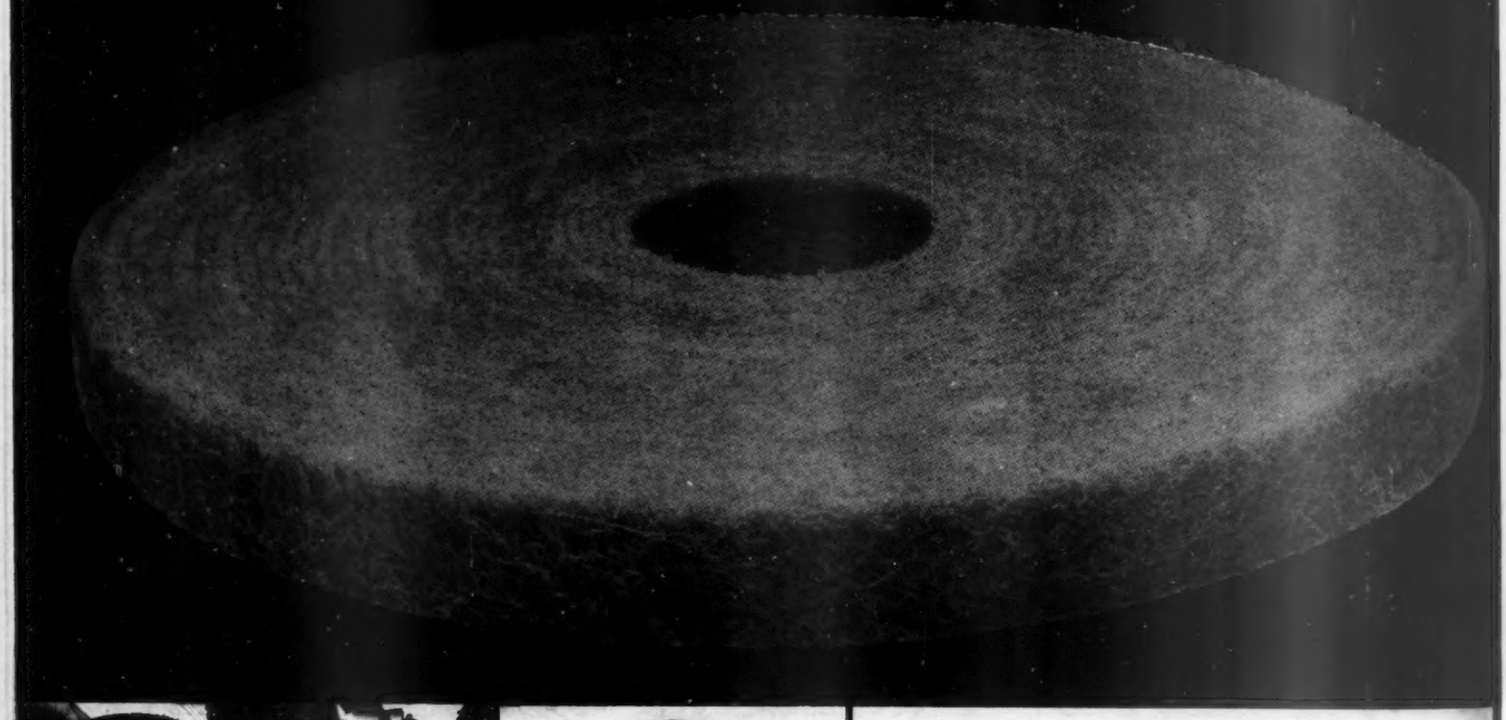
BEAR-TEX . . . the floor-cleaning pad with cleaning agents equally dispersed throughout the entire pad!

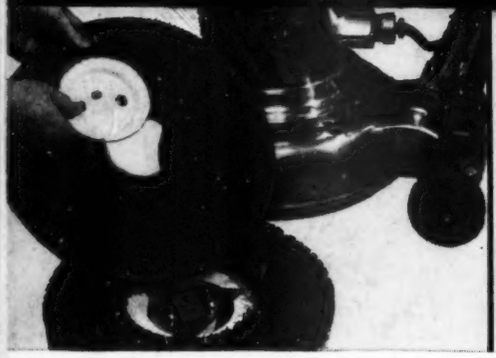
You get long, even cleaning action. You can clean any type of floor . . . even or uneven surfaces . . . and use BEAR-TEX on most model machines. Moreover: BEAR-TEX, with the unique BEAR-TEX holder, is the only floor-cleaning pad that can be positively centered and securely held in position.

For a convincing demonstration, call your nearest Behr-Manning representative, or write Dept. SL-6.

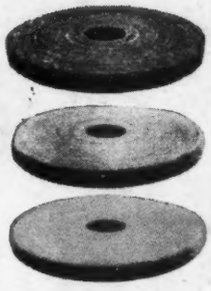
BEAR-TEX

FLOOR MAINTENANCE PRODUCTS





BEAR-TEX Holder. Note deep recess preventing holder from contact with the floor.



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For heavy-duty stripping and scrubbing.

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For high luster polishing and buffing.

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